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**CHAOS, CLAUSEWITZ, AND COMBAT:
A CRITICAL ANALYSIS OF OPERATIONAL PLANNING
IN THE VIETNAM WAR, 1966 - 1971**

by

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December 1995

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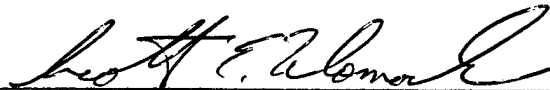
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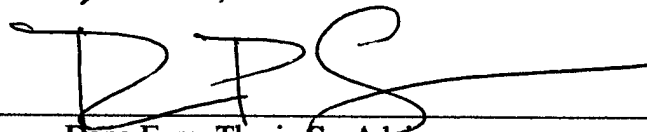


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ABSTRACT

What can theory tell us about war and the role of planning therein? This thesis attempts to answer that question by using Carl von Clausewitz's theories on war and the mathematical theory of chaos to analyze war in general and the Vietnam War in particular. It offers a critical analysis of operational planning conducted by the United States Military Assistance Command, Vietnam (MACV) during the years of greatest involvement by American forces, 1966 - 1971. Viewing war through the dual lenses of Clausewitz and chaos theory, it argues that war tends toward one of two ideal types, conventional or popular. This typology of war is the result of the interplay of its essential components, which are described by Clausewitz and correspond to a characteristic of a chaotic system. Conventional and popular wars are qualitatively distinct and require qualitatively differentiated responses. The thesis further argues that the Vietnam War displayed the characteristics of a popular war during the 1966 - 1971 time frame. Lastly, it argues that the operational planning conducted by MACV failed to account for the popular nature of the Vietnam War and exacerbated the deteriorating situation facing it by pursuing policies more suited to a conventional war.

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EXECUTIVE SUMMARY

This paper seeks to explicate and analyze the essential components of war identified by the Prussian military theorist and soldier, Carl von Clausewitz and examine the operational plans produced by the United States Military Advisory Command, Vietnam (MACV) from 1966 - 1971. It uses the mathematical theory of chaos to bring Clausewitz's theory of war into closer focus and produce an analysis with finer granularity than is possible using the text of On War alone. It does this by treating the fundamental characteristics of war discussed in Clausewitz's work as components of a chaotic system, drawing some conclusions about the nature of war in general, and exploring MACV's operational plans within this framework. The treatment of war in this way reveals that MACV's campaign plans failed to adapt to the situation in Vietnam.

Dogmatic and predictive interpretations of On War violate the essence of Clausewitz's work, which, as the title implies, is an exploration of war's essential character. Much of the confusion surrounding On War derives from its unfinished state and the unique approach the author took in analyzing war. This method employed the use of diatic pairs of characteristics, such as attack and defense or friction and genius, which interact with each other to define war's character. By citing only half of one of Clausewitz's pairs, his "critics" and "disciples" could manipulate his theory and turn it in to a positive doctrine. Thus Clausewitz is no more responsible for the "cult of the offensive" than one of the writers in the Bible is for the activities of a religious cult which blindly follows one verse of scripture and ignores its overarching message. One of the goals of

this paper is to demonstrate that the perception of Clausewitz as some sort of prophet of either total or limited war is a false dichotomy; his goal was the identification and explication of the essential components of war in general. Chaos theory provides a framework that resolves the apparent conflict between such concepts as order and disorder, pattern and randomness, and linearity and nonlinearity and thereby shows Clausewitz's appreciation of war as a unity of opposites.

A more balanced view of On War reveals that the work's scope and purpose is to develop a framework for analyzing and studying the phenomenon of war. The mathematical theory of chaos, which studies complex and unpredictable behavior within simple systems, provides an excellent vehicle to clarify some of the essential ideas expounded by Clausewitz in On War and captures the essence of that work and its subject. It does this by offering an alternative framework for analysis that may improve our understanding of some of Clausewitz's admittedly difficult and ambiguous concepts. Analysis of war in this way reveals that, although each war is unique in its particulars, it always tends toward one of two types: conventional or popular. Military power dominates the former and political power dominates the latter. Success in any particular war depends to a varying degree on the ability of each side to recognize and adapt to the type of conflict they are engaged in.

An interpretation of On War using chaos theory provides a valuable way to analyze the constituent parts of war, including the subject of this thesis: operational planning by the United States Military Assistance Command, Vietnam (MACV) from 1966 - 1971. The theories of Clausewitz and chaos are the lenses used by this thesis to

conduct a critical analysis of MACV's planning, which is a good indicator of the overall direction of the United States' effort in Vietnam. This thesis argues that MACV failed to recognize the popular nature of the Vietnam War and its unique aspects in an attempt to impose a military solution on the situation. Rather than focusing on the security of the rural population of South Vietnam, which the political and social conditions indicated was the decisive aspect of that war, MACV generally focused on the defeat of the North Vietnamese Army and the Viet Cong main forces. MACV did, of course, recognize that protection of the population was important in Vietnam and took steps toward pacification; notably General Abrams' attempt to unify the pacification and military efforts in his "one war" concept in 1970. This effort was a case of too little, too late, however, and the counterinsurgency effort never achieved the primary place that the context of the war demanded.

The scope of this thesis goes beyond mere historical curiosity, however. The identification of war's essential components and their interaction with each other using Clausewitz and chaos theory shows to what extent it is of the conventional or popular type. This, in turn, should guide leadership at every level of the conflict in its planning and conduct of the war.

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The author dedicates this thesis to the memory of Sergeant Richard B. Tuten, Jr., (1944 - 1969) and the other 58,148 service members who gave "the last measure of their full devotion" to the United States of America in Southeast Asia.

I. INTRODUCTION

A. INTRODUCTION

This paper seeks to explicate and analyze the essential components of war identified by the Prussian military theorist and soldier, Carl von Clausewitz and examine the operational plans produced by the United States Military Advisory Command, Vietnam (MACV) from 1966 - 1971. It uses the mathematical theory of chaos to bring Clausewitz's theory of war into closer focus and produce an analysis with finer granularity than is possible using the text of On War alone. It does this by treating the fundamental characteristics of war discussed in Clausewitz's work as components of a chaotic system, drawing some conclusions about the nature of war in general, and exploring MACV's operational plans within this framework. The treatment of war in this way reveals that MACV's campaign plans failed to adapt to the situation in Vietnam.

Dogmatic and predictive interpretations of On War violate the essence of Clausewitz's work, which, as the title implies, he envisioned as an exploration of war's essential character. Of such approaches to war Clausewitz comments:

It is only analytically that these attempts at theory can be called advances in the realm of truth; synthetically, in the rules and regulations they offer, they are absolutely useless. They aim at fixed values; but in war everything is uncertain, and calculations have to be made with variable quantities. They direct the inquiry exclusively toward physical quantities, whereas all military action is intertwined with psychological forces and effects. They consider only unilateral action, whereas war consists of a continuous interaction of opposites. (Clausewitz, 1989: p. 136)

Much of the confusion surrounding On War derives from its unfinished state and the unique approach the author took in analyzing war. This method employed the use of

diatic pairs of characteristics, such as attack and defense or friction and genius, which interact with each other to define war's character. By citing only half of one of Clausewitz's pairs, his "critics" and "disciples" could manipulate his theory and turn it in to a positive doctrine. Thus Clausewitz is no more responsible for the "cult of the offensive" than one of the writers in the Bible is for the activities of a religious cult which blindly follows one verse of scripture and ignores its overarching message. Christopher Brassford comments in his book, Clausewitz in English:

A historical examination of the various uses and interpretations made of the philosopher's works may also help our understanding the actual messages that those works convey. It is, after all, changing historical circumstances rather than the actual content of his work that have led to Clausewitz's being called in different eras the "apostle of total war" and "the preeminent military and political strategist of limited war in modern times." (Bassford, 1994: p.5)

One of the goals of this paper is to demonstrate that the perception of Clausewitz as some sort of prophet of either total or limited war is a false dichotomy; his goal was the identification and explication of the essential components of war in general. Chaos theory provides a framework that resolves the apparent conflict between such concepts as order and disorder, pattern and randomness, and linearity and nonlinearity and thereby shows Clausewitz's appreciation of war as a unity of opposites.

A more balanced view of On War reveals that the work's scope and purpose is to develop a framework for analyzing and studying the phenomenon of war. Historian Peter Paret sums up Clausewitz's view of theory in his book, Clausewitz and the State:

As we know, he believed that it was not the role of theory to generate doctrine. "Our aim," he wrote in a characteristic passage in *On War*, "is not to provide new principles and methods of conducting war; rather we are concerned with examining the essential content of what has long

existed, and to trace it back to its basic elements." The task of theory was to clarify reality; or, more accurately, to help men clarify it by stimulating their minds and making them more sensitive to their surroundings - in Clausewitz's case, to their military surroundings. If theory interposed itself between the individual and the world, both theory and man failed. (Paret, 1985: p. 328)

The mathematical theory of chaos, which studies complex and unpredictable behavior within simple systems, provides an excellent vehicle to clarify some of the essential ideas expounded by Clausewitz in On War and captures the essence of that work and its subject. It does this by offering an alternative framework for analysis that may improve our understanding of some of Clausewitz's admittedly difficult and ambiguous concepts.

An interpretation of On War using chaos theory provides a valuable way to analyze the constituent parts of war, including the subject of this thesis: operational planning by the United States Military Assistance Command, Vietnam (MACV) from 1966 - 1971. "In short," writes Clausewitz, "a working theory is an essential basis for criticism." (Clausewitz, 1989: p. 157) The theories of Clausewitz and chaos are the "working theories" used by this thesis to conduct a critical analysis of MACV's planning. A report by the Long Range Planning Task Group (LRPTG) convened by General Creighton Abrams, Commanding General of MACV from 1969 - 1972, underscores the importance of that headquarters in the conduct of the war:

Because there is no effective, overall inter-departmental US planning body or joint US civil-military directive agency at either the US national or the US mission level, the first level at which the US effort in Vietnam can be unified effectively is at Headquarters, MACV. (LRPTG, 1969: p. 7)

Thus the campaign plans issued by MACV are indicative of the overall direction of the United States' effort in Vietnam. Of such plans Clausewitz commented to Major von Roeder in a letter dated December 22, 1827:

A war plan results directly from the political conditions of the two warring states, as well as from their relations to third powers. A plan of campaign results from the war plan, and frequently - if there is only one theater of operations - may even be identical with it. But the political element even enters the separate components of a campaign; rarely will it be without influence on such major episodes of warfare as a battle, etc. According to this point of view, there can be no question of a *purely military* evaluation of a great strategic issue, nor of a purely military scheme to solve it. That this point of view is essential, that it is almost self-evident if we only keep the history of war in mind, scarcely needs proof. (Clausewitz, 1984: p. 9)

This thesis argues that MACV made this very mistake by failing to recognize the political nature of the Vietnam War and its unique aspects in an attempt to impose a military solution on the situation. Rather than focusing on the security of the rural population of Vietnam, which the political and social conditions indicated was the decisive aspect of that war, MACV generally focused on the defeat of the North Vietnamese Army and the Viet Cong main forces. MACV did, of course, recognize that protection of the population was important in Vietnam and took steps toward pacification; notably General Abrams' attempt to unify the pacification and military efforts in his "one war" concept in 1970. This effort was a case of too little, too late, however, and the counterinsurgency effort never achieved the primary place that the context of the war demanded.

B. METHODOLOGY

This thesis argues that war, as Clausewitz understood it, resembles a chaotic mathematical system. Because this is not a technical report, much of the arcane jargon

associated with the theory is omitted.¹ Instead, the thesis uses only those mathematical terms and concepts which are critical to a general understanding of the philosophical implications of chaos theory for an epistemology of war, while remaining true to chaos theory's main tenets. Further, most of the discussion focuses on the first chapter of Book One of On War because that chapter explores the most basic characteristics of the subject and was considered by Clausewitz to be the only finished part of the entire work.

(Clausewitz, 1989: p.70) The thesis also argues that wars tend to varying degrees toward one of two distinct types: conventional or popular; and that these types of war represent categorically different forms of warfare rather than a variance in intensity alone. Further, it argues that MACV failed to account for this fundamental feature of war and was, therefore, unsuccessful in its planning efforts.

The thesis consists of nine chapters in addition to this introduction. Chapter II offers a general definition of chaos theory, explains its basic tenets, and shows that Clausewitz's theory of war captures the essence of chaos theory in its treatment of the subject. It does this by comparing the overall characteristics of a chaotic system with several of his general conceptions of war. It then uses this framework to show that wars vary not only in intensity - quantitatively - but also that they tend toward one of two types - a qualitative difference. After discussing the general types of war, popular and conventional, it establishes the overall context of the United States' involvement in Vietnam from 1966 - 1971. These years represent the peak time span of direct

¹This includes such terms as "strange attractors," "phase space," and "period doubling," as well as any mathematical equations, tables, or graphs.

participation by United States ground forces in combat operations. Lastly, it assesses the general effectiveness of MACV in identifying which type of war it was engaged in and the efficacy of its operational planning in successfully prosecuting the war.

Chapters III through IX address specific tenets of chaos theory and compare them to some of Clausewitz's ideas about war. Each chapter then demonstrates how each specific characteristic reveals how war tends to be of either a popular or conventional type and identifies the practical implications for this distinction. Lastly, each chapter operationalizes this distinction by illustrating that the United States faced a popular war in Vietnam from 1966 -1971 and offers a critical analysis of MACV's operational planning. In doing so it determines the results of that planning and assesses the extent to which theater level planning affected the conduct of the war in Vietnam. The primary focus of this section of each chapter is the combined campaign plans issued by MACV on a yearly basis, which outlined the goals for the year and provided guidance concerning the activities of the forces in the field. These plans are compared to after-action reviews, contemporary studies, and general histories of the war in Vietnam to assess their outcome. Triangulation of these post - combat sources identifies trends in planning and execution that reveal the role of chaos in Vietnam and the efficacy of theater level planning in dealing with it.

Chapter X summarizes the work and offers some general observations on what a chaotic approach to war reveals about its nature. It also draws some conclusions about the implications of war's tendency toward one of two distinct types and the role of operational planning therein.

In summary, then, the purpose of this paper is to use the theories of Carl von Clausewitz and the mathematical theory of chaos to shed light on war in general, and particularly on the operational planning done by MACV from 1966 - 1971. Clausewitz's On War is the point of departure for the analysis of war, and chaos theory provides a more detailed and succinct way to identify the essential components and types of war. The role of these theories is, therefore, to provide a means to gain a further understanding of the phenomenon of war and the various forms it may take. The insights produced by theory may then be practically applied to MACV's attempts to prosecute the war in Vietnam.

II. WAR AS A UNITY OF OPPOSITES

A. CHAOS

Although the term chaos conjures images of complete disorder, this is not the meaning employed by chaos theory. Chaotic systems, in the mathematical sense of the word, are systems which consist of a finite number of components, called oscillators, that interact to produce unpredictable and complex behavior. Stephen Kellert, professor of philosophy of science at Indiana University and author of In the Wake of Chaos, provides the definition of chaos theory used in this paper: "Chaos theory is the qualitative study of unstable aperiodic behavior in deterministic nonlinear dynamical systems." (Kellert, 1993: p. 2) Specific uses of chaos theory include the study of turbulence in fluid motion, meteorology, planetary motion, and asteroid belts. (Ruelle, 1991: p. 78) Each of these systems exhibits paradoxical behavior worthy of a Zen koan: a mixture of order and disorder; predictability and unpredictability, randomness and pattern. The weather, for example, is predictable both in the short term and in the sense that it generally adheres to seasonal cycles. It is simultaneously unpredictable, however, because the specific systems that compose it cannot be accurately predicted beyond a week or two, nor can the severity or specific length of the seasons be predicted. Due to the impossibility of obtaining precise measurements or quantifying the basic dynamics of human activities, the exact study of chaotic human phenomena such as war remains impossible. David Ruelle, one of the founders of chaos theory, recognizes this and writes, "For such systems, then, the impact of chaos remains for the time being at the level of scientific philosophy rather than quantitative science." (Ruelle, 1991: p.79) For this reason this chapter will focus on

these philosophical considerations in lieu of a detailed examination of the mathematics involved in physical chaotic systems.

B. CHAOS AND CLAUSEWITZ

A philosophical view of chaos theory provides a bridge from the world of the "hard" sciences to that of human activity that is consistent with the realities posed by those activities. David Ruelle writes:

Chance and randomness did not look like very promising topics for precise investigation, and were in fact shunned by many early scientists. Yet they now play a central role in our understanding of the nature of things. . . We have seen how we idealize the world around us in physical theories, and how *chaos* limits the intellectual control that we have on the evolution of the world. We have seen how a correct assessment of chance and *predictability* is important for everyday life and for history. (Ruelle, 1991: p. 163)

Carl von Clausewitz recognized the pervasive role of chance in war, which prompted him to write, "No other human activity is so continuously or universally bound up with chance." (Clausewitz, 1989: p.) The importance of a statement such as this cannot be overemphasized, for it challenges the ontology of those who would simplify war to a few positive principles and linear relationships. Clausewitz's theory of war, set forth in On War, contains many such statements and makes analogies to war that, in their very essence, resemble chaos theory.

Clausewitz uses several analogies in On War to describe war in a general way. These analogies progress in increasing sophistication and each contains aspects of chaotic systems. The first is the image of war as a contest between two wrestlers. The second is the image of a card game. The last is that of a pendulum suspended between three magnets. These metaphors demonstrate the qualitative and interactive nature of war and

highlight several of the specific similarities between the theory of war contained in On War and chaos theory.

The first metaphor Clausewitz uses for war is that of a pair of wrestlers. He writes:

War is nothing but a duel on a larger scale. Countless duels go to make up war, but a picture of it as a whole can be formed by imagining a pair of wrestlers. Each tries through physical force to compel the other to do his will; his *immediate* aim is to *throw* his opponent in order to make him incapable of further resistance. (Clausewitz, 1989: p.75)

This seemingly obvious statement has the important implication that war, like a chaotic system, is interactive. Historian Alan Beyerchen notes of this illustration in his article, "Clausewitz, Nonlinearity, and War":

For Clausewitz, the interactive nature of war produces a system driven by psychological forces and characterized by positive feedback, leading "in theory" to limitless extremes of mutual exertion and efforts to get the better of one another. The course of a given war becomes thereby not the mere sequence of intentions and actions of each opponent, but the pattern or shape generated by mutually hostile intentions and simultaneously consequential actions. The contest is not the presence or actions of each opponent added together. It is the dynamic set of patterns made in the space between and around the contestants. (Beyerchen, 1993: p. 67)

The interaction between the two wrestlers produces an unpredictable system that, like any chaotic system, has predictable elements, such as the effect of the weight and skill of the opponents. Further, it contains pattern in the form of a bounded space and rules of conduct, yet leaves room for the entrance of chance into the interaction. Like chaotic systems, the struggle has a finite number of components and outcomes yet remains unstable, and no two matches will repeat themselves in exactly the same way.

This does not mean, however, that linearities are not present in such a contest. All other things being equal, the larger wrestler will win a match just as the side with the biggest battalions will win a battle. One of Clausewitz's points is that "other things" can never be counted on to be equal: the speed and technique of each wrestler matter, as does the intervention of chance into the interaction of the opposing sides. Context, then, plays a vital role and contributes to the unstable nature of war.

The next analogy made by Clausewitz to depict war is that of a card game. He writes, "From the very start there is an interplay of possibilities, probabilities, good luck and bad that weaves its way throughout the length and breadth of the tapestry. In the whole range of human activities, war most closely resembles a game of cards."

(Clausewitz, 1989: p. 86) Again this simple analogy emphasizes the importance of interaction. Like the wrestling analogy, the card game image includes many of the basic elements of chaotic systems - unpredictability, randomness, and interaction - all in a system that has a finite number of components and possible outcomes. It is more sophisticated than the wrestling analogy due to the overt addition of the element of chance caused by the shuffling of the cards and the element of calculated risk implied in the bidding associated with games of chance between opponents.

The last analogy for war used by Clausewitz that resembles a chaotic system is a comparison to the Christian Trinity, represented in his work by a pendulum suspended between three magnets composed of the people of a state, its government, and its armed forces. Of these forces he writes:

These three tendencies are like three different codes of law, deep-rooted in their subject and yet variable in their relationship to one another. A theory

that ignores any one of them or seeks to fix an arbitrary relationship between them would conflict with reality to such an extent that for this reason alone it would be totally useless. Our task, therefore is to develop a theory that maintains a balance between these three tendencies, like an object suspended between three magnets. (Clausewitz, 1989: p. 89)

Although this analogy refers mainly to the characteristics of individual belligerents rather than to war itself, it still captures the essence of a chaotic system because the three magnets interact with the pendulum in different ways. As Clausewitz suggests, the strengths and distances between the magnets are not constant, which results in a system that behaves unpredictably yet remains constrained by the forces exerted by the magnets. Rather than the image of a pendulum suspended motionless between three equidistant magnets of equal strength, the accurate image is one of a pendulum swinging wildly and unpredictably as the forces and distances between the magnets exert their varying influence on it.

C. CHAOS, CLAUSEWITZ, AND COMBAT

Viewing war through the lens of both Clausewitz and chaos theory reveals that wars vary not only in intensity but in a qualitative way. Clausewitz wrote in a note of 10 July 1827 that he intended to revise On War in the light of this fact, although his early death prevented the revision of any more than Book One. He writes:

War can be of two kinds, in the sense that either the objective is to *overthrow the enemy* - to render him politically helpless or militarily impotent, thus forcing him to sign whatever peace we please; or *merely to occupy some of his frontier-districts* so that we can annex them or use them for bargaining at the peace negotiations. Transitions from one type to the other will of course recur in my treatment; but the fact that the aims of the two types are quite different must be clear at all times, and their points of irreconcilability brought out. (Clausewitz, 1989: p. 69)

Thus Clausewitz argues that wars vary not only in the intensity of their execution, but in the intensity of their aims.

An appreciation of chaos theory expands Clausewitz's concept of two types of war by revealing that the distinction between the types is not only in the intensity of its conduct and the totality of its aims, but that war tends toward one of two completely different kinds: conventional war versus popular war. The dynamics, interactions, and effects of chance discussed by Clausewitz combine in different ways to produce this qualitative difference. Nuclear war is a third possible kind of war, but is not discussed in this paper for the sake of brevity and because it was not a factor in MACV's planning during the United States' involvement in Vietnam.² Chaos theory allows us to make this typological distinction because chaotic systems exhibit this trait. Stephen Kellert writes:

The crucial point here is the distinction between specific *quantitative* predictions, the usual sort of which are impossible for chaotic systems, and *qualitative* predictions, which are at the heart of dynamical systems theory. . . Qualitative understanding is complimentary; it predicts properties of a system that will remain valid for very long times and usually for all future time. (Kellert, 1993: p. 101)

Thus chaos theory seeks to identify the various forms that chaotic phenomena and their subsystems take rather than achieve a quantitative "solution" to any particular system.

A qualitative understanding of war, one similar to that which Clausewitz had, means that conventional and popular wars are completely different in a theoretical sense: they represent ideal types. In reality, any war will exhibit characteristics of both but will tend toward one or the other type. As in a chaotic system, any particular war may also

²MACV explicitly assumed that neither the Soviet Union nor the People's Republic of China would directly intervene in the Vietnam War, implying the absence of nuclear conflict therein.

change types at any time for reasons that may be a result of chance. The context of any given war at any given time will determine which type of war it is. Fortunately, it is possible to determine what type of conflict one is facing by examining its constituent parts. War, like any chaotic system, consists of a finite number of interacting parts whose properties can be analyzed and identified. This analysis reveals the nature of the war being examined and shows whether it tends toward the popular or conventional type. This, in turn, has implications for the operational commander in a war, who must successfully adapt to the type of war being waged.

The distinctions between popular war and conventional war are obvious, yet the belief that they differ only in "intensity" and that they can be successfully waged in the same manner persists. Other common phrases used for popular war are low intensity conflict, operations other than war, insurgency, revolutionary war, political violence, internal war, and wars of national liberation. John Shy describes a popular war in the second edition of Makers of Modern Strategy under the rubric of revolutionary war. He writes:

"Revolutionary war" refers to the seizure of political power by the use of armed force. Not everyone would accept such a simple definition, and indeed the term has other connotations: that the seizure of power is by a popular or broad - based political movement, that the seizure entails a fairly long period of armed conflict, and that power is seized in order to carry out a well - advertised political or social program. (Paret, 1986: p. 817)

Due to the rhetorical baggage associated with the word "revolutionary," this paper uses the term popular war because it is broad enough to include all forms of domestic violence that seek political power at the expense of the current regime yet keeps these phenomena in the category of war. In general, popular wars include overt struggle for popular

support, or "winning the hearts and minds" of the population. This manifests itself by the use of limited force by small units who are integrated into the surrounding population, decentralized command and control by political leaders who may or may not be state actors, and total political aims intended to gain or maintain power at the expense of the opponent.

Conventional war, in contrast, is dominated by military conflict in pursuit of political goals by established political entities. It exhibits the use of massive force by large military units that operate independently (i.e., they are not directly tied to the surrounding population). These military forces operate under centralized command and control by state leaders in pursuit of goals that may or may not entail the complete defeat of the enemy. Unlike popular war, in which stakes are "winner take all," it is not necessarily a "zero sum game."

The qualitative distinction between popular and conventional war has operational implications for an external intervener. Recognition of the type of war facing a prospective outside power is critical to the successful prosecution of that war, and no amount of physical power can overcome the intellectual failure of fighting the wrong war using the wrong instruments. Historian Larry Cable writes:

War exists first as an idea. Before men and materiel are assembled, long before the fear and exhilaration of combat, very long before the consequences become apparent, war exists as an idea in the minds of policy makers and military commanders alike. The conceptualizations of war which exist in the minds of those who make and execute national security policy will in large measure govern the outcome of war. Bad concepts assure a bad outcome. Material strength and technological sophistication cannot redeem a faulty idea. (Cable, 1991: p. vii)

Hidden in the chaos of every war's seeming uniqueness is the pattern inherent in every

chaotic phenomenon, and recognition of this pattern - whether a war tends toward the popular or conventional variety - is the first step in achieving a successful outcome.

The primacy of the fight for popular support in the former type of war places a premium on reliance on the host government because it can exercise greater political power over its population than an external government. Further, the primary operational goal in a popular war is political: to establish social control via a legitimate host government. Then it is possible to separate the insurgents from the population and defeat them militarily. Pursuing a military victory without establishing social control is meaningless because the political infrastructure of the insurgents remains attached to the population. The United States' involvement in Vietnam is illustrative of this: defeating the military forces of North Vietnam in the sparsely populated central highlands was meaningless without winning the political war waged by the Viet Cong in the coastal plains.

In conventional war the military conflict is dominant, and military power determines the result. The primary operational goal is the erosion of the other state's will to continue the struggle by the defeat of his armed forces, the occupation of strategic terrain, or wearing him out in a protracted war of attrition. Once this has been done the opposing state collapses, surrenders, or agrees to negotiations, and the victors establish the peace: a reversal of the process in internal war. Pursuing military victory in a conventional war is the primary means to the political end. The United States' involvement in the Gulf War in 1990 is an example of this type of war: the military defeat

of Iraq's armed forces produced an armistice that enabled the Kuwaiti government to reestablish control over its population.

Identification of whether an external power is involved in a popular or conventional war is critical to any decisions regarding how that power acts. The side that retains the initiative determines what type of war will occur at its outset. In the case of intervention, the side that instigated the war initially has that initiative. Iraq, for example, began the Gulf War in a conventional manner and the United States countered it with a like response. The Viet Cong, in contrast, were engaged in a popular war when the United States intervened. Fighting in a conventional manner in a popular war is thus inimicable to establishing social control because its focus is not on the political defeat of the insurgent's infrastructure but on the military defeat of their armed forces, which can be regenerated by the political arm. Defeat of the political arm of an insurgency first by destroying the political infrastructure and gaining control over the host country's population renders the military arm vulnerable to defeat because it can no longer be regenerated and cannot hide amongst the population.

D. THE CONTEXT OF THE WAR IN VIETNAM, 1966 - 1971

The question whether the Vietnam War was an insurgency or conventional war is a subject that bedeviled the participants at the time and has preoccupied historians ever since. Roger Beaumont writes in his book, War, Chaos and History:

Many postmortems of the Vietnam War reflected frustration at being unable to mold the bewildering collage of events, motives, and so on, into a coherent configuration, and at not being able to wade in with the proverbial gloves off. . . Vietnam, if plotted on a spectrum of warfare running from minimum complexity to chaos, would be seen as lying far closer to the latter than the former. (Beaumont, 1994: p. 138)

This section argues that the Vietnam War was primarily a popular war until after the withdrawal of United States combat forces in 1972, when it gradually changed into a conventional war culminating in the successful invasion of the Republic of South Vietnam by the People's Army of Vietnam (PAVN) in 1975.

The last section indicated that the belligerent in a conflict that had the initiative in any given war would determine what type of war it was. In the case of intervention, this necessarily means that initially the external intervener does not have the initiative because it is reacting to the activities of another power. The Vietnam War is no exception to this idea: the United States employed ground forces in 1965 in reaction to Viet Cong attacks on vital air bases and it was never able to take the initiative away from either the Viet Cong or the Democratic Republic of Vietnam during the entire conflict. A case study on the Vietnam War in a Harvard University National Security Program Discussion Paper on low intensity conflict concludes:

In retrospect, there is little doubt who scripted the ebb and flow of the war in Vietnam. From the Viet Cong terror attacks in downtown Saigon to the country - wide Tet Offensive, the North Vietnamese and Viet Cong guerrillas had their hands on the strategic throttle of the war. They controlled the war's rhythm to suit their battlefield and psychological warfare needs. (Crane, et al., 1988: p. 240)

The Viet Cong, and later the North Vietnamese, determined the character of the war in spite of the United States' efforts to impose its will on the situation because they continued to fight a popular war while the United States attempted to make it a conventional one. Once the United States lost the popular war, the Democratic Republic of Vietnam was free to mobilize, train, and employ its conventional forces against those of the Republic of

South Vietnam, which, without direct military support from the United States, were unable to stop the onslaught.

The type of war chosen by its protagonists prior to 1975, the Viet Cong and their North Vietnamese allies, was a popular one which was designed to exhaust the United States. There were some unsuccessful attempts to win conventional battles, notably parts of the 1968 Tet Offensive and the 1972 Easter Offensive, but defeat in these operations only forced the communists to revert to popular war until they had the strength to overwhelm South Vietnam's forces after the United States lost heart and quit the field. The predominant role of the Viet Cong as an independent organization with tenuous ties to the Democratic Republic of Vietnam is indicative of the popular nature of the conflict. George Ball, Undersecretary of State for the Johnson Administration, sent a memorandum to Secretary of State Dean Acheson and Secretary of Defense Robert McNamara on the eve of the commitment of ground combat forces to Vietnam that assessed the relative roles of the Viet Cong and North Vietnamese. He writes, "*The Viet Cong - while supported and guided from the North - is largely an indigenous movement.* Although we have emphasized the Cold War aspects, the conflict in South Vietnam is essentially a civil war within that country." (Cable, 1986: p. 270) It was this indigenous movement that established the context of the United States' involvement in Vietnam at its outset.

The Viet Cong, and later the North Vietnamese, chose a popular war as the mechanism to defeat the United States. To do this they infiltrated cadre into the heavily populated and disaffected coastal plain and Mekong Delta areas by inserting permanent cells into each hamlet, which was the basic political unit of rural Vietnam at the time.

Larger units of Viet Cong and PAVN forces operated in the sparsely populated central highlands to draw the combat power and other resources of the United States and the Republic of Vietnam away from the areas of importance in a popular war: the heavily populated regions. Further, they applied limited, discriminate coercion in these areas and relied heavily on psychological warfare and political indoctrination to win the population to their side. This provided a source of recruitment for losses sustained by main force units operating in the hinterland, as well as food and some measure of security. This campaign continued until the North Vietnamese felt they had enough force to defeat their enemy conventionally, which they finally did in 1975 after the failed attempts of 1968 and 1972.

The popular nature of the war in Vietnam demanded a response from MACV that countered the Viet Cong's strategy and took the initiative from them where it mattered the most: in the hamlets on the coastal plain and Mekong Delta regions. Defeating the insurgency meant winning the political battle by providing the hamlets with meaningful security and permanent government presence. Specifically, operational planning by MACV had to offer a response that placed a premium on host government participation in an integrated civil - military system that primarily policed the regions of Viet Cong cell activity while keeping an eye on possible conventional troop movements by the Democratic Republic of Vietnam. The next section will assess MACV's operational planning in a general way.

E. OPERATIONAL PLANNING IN VIETNAM, 1966 - 1971

MACV failed, particularly in the years 1966 - 1969, to emphasize the popular aspect of the Vietnam War until it was too late. The mission statement of the combined campaign plan for 1966 states, "The mission of RVNAF [Republic of Vietnam Armed Forces] and US/FWMA [United States/Free World Military Assistance] forces is to defeat the VC [Vietcong] and extend GVN [Government of Vietnam] control in the Republic of Vietnam." (MACV, 1966: p. 153) The mission statements for 1967, 1968, and 1969 are similar, stating, "The mission of RVNAF and US/FWMAF is to defeat the VC/NVA [North Vietnamese Army] forces and to extend GVN control throughout the Republic of Vietnam." (MACV, 1967: p.5; 1968: p. 2; 1969: p. 2) Although these mission statements include the extension of political power by the Republic of Vietnam as part of the mission, it comes after the mission to defeat the Viet Cong and North Vietnamese and makes no mention of providing meaningful and lasting security to the population of South Vietnam.

The mission statements in the campaign plans for 1970 and 1971 show a marked improvement in focusing attention on security for the population. The 1970 mission statement reads, "The mission of RVNAF and FWMAF is to assure the security of the Vietnamese people by defeating the VC/NVA forces and by participating in the government Pacification and Development Plan, especially in the program to neutralize the VCI [Viet Cong Infrastructure], throughout the Republic of Vietnam." (MACV, 1970: p. 2) The mission for 1971 is identical except for the removal of the counter VCI phrase. (MACV, 1971: p.2) The emphasis on security is clear in these examples, although the

first means listed to obtain security is defeat of the Viet Cong and North Vietnamese main units. The mission statements, particularly in 1970 and 1971, give pacification a major role and place it on an almost equal footing with the large unit war.

The commander's concept of the operation is a statement of how the commander visualizes the accomplishment of his mission and establishes the parameters in which his subordinates will operate. The MACV Commanders, General William C. Westmoreland (1965 - 1968) and General Creighton Abrams (1968 - 1972) used this vehicle in the combined campaign plans to communicate their ideas of how the campaign should proceed to accomplish the aforementioned missions. In general, both commanders failed to place population security as a top priority in their concepts.

In 1966 General Westmoreland sought to accomplish the following tasks in this order:

- 1) Establish and defend major bases.
- 2) Defend governmental centers and secure resources.
- 3) Open main roads, railroads, and waterways.
- 4) Mount sustained ground and air operations against VC forces and bases.
- 5) Frustrate the VC strategy.
- 6) Provide security for expansion of GVN control.
- 7) Interdict VC land and water routes of infiltration.
- 8) Provide combat and logistics air support. (MACV, 1966: p. 154)

He planned to accomplish this mission by having both the United States and South Vietnamese forces focus on all of the listed tasks. Conspicuous by its absence is any mention of population protection or long term security beyond the vague "frustrate the VC strategy." Providing for the expansion of the Republic of Vietnam's control is as close as the order gets, and this task is relegated to the sixth place out of eight.

The 1967 concept within the campaign plan contrasts with the 1966 one in several ways. Rather than a terse list of tasks, the concept of the operation is a five page narrative. United States and South Vietnamese forces have different foci in the 1967 order: the former concentrating on destruction of Viet Cong and North Vietnamese main forces and the latter focusing on pacification, known in the order as Revolutionary Development. Its main focus is on ". . . a strategic and tactical offensive in consonance with political, economic, and sociological programs of GVN and US/FW agencies." (MACV, 1967: p. 4) This offensive was to occur via the aforementioned division of labor plus operations designed to eliminate the VCI, increase operational tempo on surface lines of communication to reduce the dependence on airlift for logistics, neutralization of the enemy's base areas, control of priority areas [major cities and military bases], border surveillance and interdiction, increased use of air and naval power, and psychological warfare. (MACV, 1967: pp. 4 - 9) The establishment of a division of labor giving the United States forces control of the large unit war and the South Vietnamese forces control of Revolutionary Development and the lack of emphasis on pacification of the countryside in the description of the concept inevitably led to the bulk of the United States' attention and resources going to the conventional war rather than the popular one.

The 1968 plan used the same division of labor but listed only three tasks in its concept: containment and anti - invasion operations along the borders of South Vietnam, sustained and unrelenting offensive pressure on VC/NVA base areas, and support of the pacification effort. (MACV, 1969: p. 6) Again, the tasks appeared in order of

importance and relegated pacification to the last position and the division of labor continued to focus United States' attention and resources on the large unit war.

The 1969 plan, under General Abrams' leadership, altered the division of labor and focused even more attention on the large unit war. In this instance the regular forces of South Vietnam would join the United States in conducting the war against the Viet Cong and North Vietnamese main forces and the irregular popular and regional forces would assume the pacification effort. This plan lists four tasks in this order: a sustained offensive against VC/NVA forces and bases, border surveillance and interdiction, protection of major cities, and pacification conducted by territorial security forces. (MACV, 1969: p. 5) Again, the focus of the campaign plan is on the large unit war and relegates the popular war to an even smaller role by focusing the Army of the Republic of Vietnam on the conventional war and leaving the poorly resourced territorial forces in charge of the pacification effort.

The 1970 campaign plan's concept focused on the impending withdrawal of United States forces from Vietnam and the attainment of a system that was not dependent upon direct participation by "free world military assistance forces." To do this, General Abrams proposed to ". . . continue to conduct combined or unilateral operations to meet enemy formations and reduce selected base areas." (MACV, 1970: p. 6) This would reduce the external threat facing the Republic of Vietnam and, combined with the attainment of pacification and development goals, would eliminate the need for United States' forces. The 1971 concept was almost identical but more urgently stated the desire for minimum participation by the United States. (MACV, 1971: p. 5) The problem with

these concepts is that they assumed that pacification goals would be met without placing any emphasis on them. Again, American and South Vietnamese regular forces focused on the large unit war and territorial forces handled the pacification effort. This, in turn, focused most of the attention and resources on the conventional effort to the detriment of the popular effort.

The combined campaign plans issued by MACV were supposed to complement the Republic of Vietnam's Pacification and Development Plans issued in the same year. In fact, General Abrams enclosed a letter on English translations of the plan that were distributed to subordinate units that stated:

The Pacification and Development Plan and the Combined Campaign Plan, AB 145, complement each other. The Pacification and Development Plan is, however, the authoritative document on pacification policies and where minor variations occur, the Pacification and Development Plan governs. (RVN, 1970: p. 1)

A problem arises, however, where military policies not related to pacification conflict with the Pacification and Development Plan. The annex dealing with the participation of military forces in pacification in the 1970 plan called for both United States and South Vietnamese forces, regular and territorial, to provide security to the Vietnamese people by accomplishing the following tasks in this order:

- 1) Maintaining continuous and permanent security for people living in secure areas.
- 2) Extending security to people outside the secure areas.
- 3) Neutralizing the local force, guerrillas, and VCI units or individuals found among the people.
- 4) Forcing the withdrawal of NVA forces to North Vietnam, by both military and political actions.
- 5) Creating a security system that is not dependent on the continued presence of FWMAF. (RVN, 1970: p. I-1-2)

These tasks match the mission statement of the 1970 plan but do not conform to the concept elucidated in the campaign plan that emphasizes the large unit war. In spite of guidance dictating the primacy of pacification, it was the conventional war that received the most attention and resources.

The conflicting guidance from MACV regarding the relative importance of the popular war versus the large unit war manifest itself in combat after action reports submitted by various units during the Vietnam War. The American 173rd Airborne Brigade and the Republic of Vietnam's 22nd infantry Division conducted a joint operation in August 1968 that is illustrative of one attempt to reconcile these missions. Operation Dan Sinh occurred in the Bong Son plains, a heavily populated rice producing region in the coastal plains. Their mission: ". . . find, fix and destroy enemy forces, render inoperable the Viet Cong infrastructure and screen and reclassify all civilians living within the Bong Son plains area." (173rd, 1969: p. 4) To execute the mission the units formulated a three phase plan that first targeted large Viet Cong units, then attempted to separate the VCI from the population, then saturated the area with United States and South Vietnamese forces for two months. (173rd, 1969: pp. 4-7) The results of the operation were predictable to one familiar with popular war: the Viet Cong main forces pulled out rather than face the massive firepower of their conventional adversaries. United States Army Engineers used Rome Plows in the villages to destroy Viet Cong bunkers and trenches with collateral damage to much of the village. The displaced population (13,854) was screened by the National Police, who found 199 suspected VCI among them. After two months of patrolling the military left the area with a Viet Cong body count of 264

killed in action and 140 captured. (173rd, 1969: pp. 7-33) The long term effects of Operation Dan Sinh were effectively nil: the Viet Cong returned once the military left because there was no permanent government presence in the Bong Son plains, the villagers returned to their leveled huts and rebuilt the hamlets, and military forces would again return to the area to "... find, fix and destroy enemy forces, render inoperable the Viet Cong infrastructure and screen and reclassify all civilians living within the Bong Son plains area."

General Abrams' LRPTG reached a similar conclusion in the same year that the 173rd Airborne Brigade was conducting Operation Dan Sinh. Its report states:

How are we doing? The most honest way to answer this question is: "We really aren't quite sure." And the reason, of course is the plethora of military and civilian agencies, each with its own individual - and often conflicting - goals, programs, and evaluation systems. However, based upon the two-fold nature of our effort, we believe we are generally succeeding in achieving conventional military goals but paradoxically not succeeding in establishing reasonable security, in the country-side. Also, we are falling short in the national development portion. (LRPTG, 1969: p. 29)

The LRPTG's report reflects the same confusion over pacification and the conventional war that Operational Dan Sinh attempted to overcome by its three phased operation. It also shows the extent to which MACV viewed the war as a conventional rather than a popular one.

MACV's attempts to reconcile the pacification and large unit efforts in General Abrams' one war concept expressed in the 1970 and 1971 campaign plans occurred too late and were too contradictory to overcome the conventional focus of that headquarters. General Bruce Palmer, a Corps Commander and later Deputy Commander, MACV,

summarizes the effects of the United States' focus on fighting a conventional war in Vietnam. He writes:

The consequences of our conscious decision to give first priority to the defeat of the enemy regular forces in the field, using American forces almost exclusively, were wide ranging with many adverse ramifications. That decision diverted U.S. attention, priority of effort, and precious resources away from the primary task of developing South Vietnamese forces capable of defending their country from subversion or overt invasion from the North. (Palmer, 1984: p. 179)

MACV, then, recognized that the war in Vietnam had some characteristics of a popular war but generally emphasized the conventional aspects of the conflict in its guidance. The dissonance created by relying heavily on conventional operations in a popular war heightened the chaos level of the Vietnam War and ultimately contributed to the United States' and South Vietnam's defeat.

The following chapters discuss the specific characteristics of war that reveal whether it is a popular war or a conventional one. They do this by comparing each of the specific tenets of Kellert's definition of chaos theory³ with one of Clausewitz's ideas about war and identifying how those ideas are manifest in each type of war. They will then show that the United States was involved in a popular war in Vietnam from 1965 - 1972 and assess MACV's operational planning in that light.

³See page 8, above, for Kellert's definition. (Kellert, 1993: p. 2)

III. THE DYNAMICS OF DUALISM

A. CHAOS, CLAUSEWITZ, AND THE DYNAMICS OF WAR

The first specific element of a chaotic system addressed in this paper is its dynamical nature. A dynamical system is simply one whose constituent parts and their interrelationships can be identified and mathematically expressed over time. Kellert describes it as one which "... is thus a simplified model for the time varying behavior of an actual system." (Kellert, 1993: p. 2) The term oscillator used by those familiar with chaos theory refers to the components of a system, such as the interaction of heat, gravity, and air in a convection system. War in its entirety cannot be mathematically expressed as a chaotic system because it is impossible to precisely determine the value of some of its components, such as moral considerations and political objectives. Philosophically, however, it does consist of interacting components that can be analyzed and it does evolve over time. Ruelle comments of such human phenomena, "We are left, therefore, with the tantalizing situation that we see time evolutions similar in some sense to those of chaotic physical systems, but sufficiently different that we cannot analyze them [mathematically] at this time." (Ruelle, 1991: p. 85) By dynamical, then, we mean a system which changes over time and consists of a set of identifiable interacting parts.

Clausewitz's theory of war accounts for this aspect of Kellert's definition of a chaotic system. Like a dynamical system, war evolves over time and consists of an identifiable number of components and interrelationships. Clausewitz identifies both of these characteristics of war and discusses them in On War. Of the former he writes:

If war consisted of one decisive act or of a set of simultaneous decisions, preparations would tend toward totality, for no omission could ever be rectified. The sole criterion for preparations which the world of reality could provide would be the measures taken by the adversary - so far as they are known; the rest would once more be reduced to abstract calculations. But if the decision in war consists of several successive acts, then each of them, seen in context, will provide a gauge for those that follow. Here again, the abstract world is ousted by the real one and the trend to the extreme is thereby moderated. (Clausewitz, 1989: p. 79)

Combined with the interaction of the components of Clausewitz's famous "paradoxical Trinity" of the people, policies, and armed forces of a state, this passage shows both time evolution in the system and some of the interacting parts of war. (Clausewitz, 1989: p. 89) Beyerchen comments on the Trinity, "The nature of war should not be conceived as a stationary point among the members of the Trinity, but as a complex trajectory traced among them." (Beyerchen, 1993: p. 71) War as Clausewitz sees it, then, is a dynamical system that changes with time and consists of a finite number of interacting parts.

War's dynamical nature points out the first distinction between conventional and popular war: the flow of events. Conventional wars begin with the formulation of political goals of varying importance and their pursuit by overt military means. Violent conflict results and centers on either physical terrain, such as a state capital or strategic area, or on the opposition's armed forces, with the ultimate aim of eroding the opponent's will to resist. The results of this military conflict determine the winner and peace is either imposed by the victor or negotiated between the two adversaries if they both conclude that, on certain terms, peace is in their interest. Diplomatic efforts and deployment time may result in an interruption of hostilities, but the flow of events follows this general path. Again, the Gulf War is a classic example of a conventional war: the United States

determined its political goals, deployed its forces and imposed its will on Iraq via military victory.

Popular wars, in contrast, follow a general path from a militarily latent phase of political agitation and infrastructure building to one of guerilla warfare, which culminates in the third stage: a strategic offensive which follows the lines of a conventional war and seeks the outright defeat of the ruling government. The first phase attempts to fuse the insurgents to the population via psychological and political warfare against the regime and its external sponsor. The second phase weakens the government via attrition and cements the insurgents' control over the hinterland by developing base areas from which to strike, as well as the building of a conventional - style military force. The final phase is a conventional war with the total aim of overthrowing the existing regime. Transitions from one phase to the next and back occur as the system progresses and the guerrilla phase remains active throughout, but in the end either the insurgency wins or the state successfully gains control of its population and eliminates the insurgents. General Vo Nguyen Giap, the leader of the Viet Minh's military arm during the French Indochina war describes these phases in action:

The general law of a long revolutionary war is usually to go through three stages: defensive, equilibrium, and offensive. Fundamentally, in the main directions, our Resistance War also followed this general law. Of course, the reality on the battlefields unfolded in a more lively and more complicated manner. Implementing the guiding principle of a long war, after a period of fighting to wear out and check the enemy troops, we carried out a strategic withdrawal from the cities to the countryside in order to preserve our forces and defend our rural bases. Following the failure of the enemy offensive in Viet Bac, equilibrium gradually came into being. We decided to launch an extensive guerilla war. From 1950 onward, campaigns of local counter offensives were successively opened and we won the initiative on the northern battlefield. The Dien Bien Phu

campaign in early 1954 was a big counter offensive which ended the Resistance War with a great victory. (Pomeroy, 1968: p. 215)

Giap's statement reveals the general pattern of internal wars, be they "classic" wars of national liberation or more ambiguous ones like the recent conflict in Somalia. The war fought by the United States in Vietnam is another example of popular war: the Viet Cong successfully infiltrated the population and built a guerilla force. An attempt to go to the conventional phase during the 1968 Tet Offensive resulted in military defeat for the Viet Cong, which immediately returned to the guerilla phase of the war. Ultimately, the war ended in a conventional manner, but only after the United States lost politically in the first two stages and withdrew.

The dynamical nature of the types of war have implications for the external intervener. If the flow of events, or successive acts in Clausewitz's parlance, follows the conventional path, then deployment of military force designed to fight over the physical or military terrain against an opposing armed force is vital to success. If, however, the war follows the popular path and has not yet reached the conventional war stage, then the primary actions of the intervener should be in the political and psychological realm and should be designed to bolster the host government and help it gain control over its population. To do this it must focus on the human terrain and on the bond between the insurgent and the population. Conventional military force cannot break this bond without alienating the population and strengthening their bond to the insurgents. This does not rule out the deployment of conventional force, which may be required in the event the conflict suddenly shifts to the conventional phase, but it does place the primary focus of

the sponsor's intervention on counter insurgency. Conventional forces represent the "other war" in this conflict and pacification remains the main effort.

B. THE DYNAMICS OF THE VIETNAM WAR, 1966 - 1971

The Vietnam War closely followed the popular war dynamic and transitioned from one phase to the next and back again several times. By 1957, the latent phase of the war had turned into guerrilla war after the Republic of Vietnam's President, Ngo Dinh Diem politically disenfranchised and estranged the peasantry by cancelling local elections, installing Catholic officials in largely Buddhist villages, and bungling an attempt at land reform. Larry Cable describes this results of these policies in his book, Conflict of Myths:

When the first rumblings of rural discontent were met by repressive moves from the security police under the direction of President Diem's brother, Nhu, it was scarcely remarkable that insurrection reared its head. While this incipient insurgency was certainly a more welcome development than the Marxist regime of Ho Chi Minh in the Democratic Republic of Vietnam (DRV), as North Vietnam was more properly known, the insurgent movement neither started in Hanoi nor was controlled from there. (Cable, 1986: p. 186)

Thus the latest transition from the latent phase of the popular war, ongoing since the end of the French Indochinese war in 1954 returned the specter of guerilla war to the forefront.

The guerilla warfare phase of the Vietnam War would continue uninterrupted until the Tet Offensive of 1968, when the Viet Cong, with the encouragement of the Democratic Republic of Vietnam unsuccessfully attempted to move the conflict to the conventional phase. The Tet Offensive was a turning point in the Vietnam War for two major reasons: it simultaneously decimated the Viet Cong, and crushed the United States' optimism that the war was progressing well. After the Tet Offensive, the war returned to

the guerilla phase, but now under the closer direction of the North Vietnamese, who took advantage of the devastating losses suffered by the then independent Viet Cong by inserting their own agents into the Viet Cong's existing infrastructure in a clever bit of *Gleichschaltung*. Stanley Karnow, author of Vietnam: A History, includes an interview with Dr. Duong Quynh Hoa, a former Viet Cong cadre member that describes this process:

"We lost our best people," she said mournfully, recalling that Vietcong military units composed mostly of indigenous southerners had borne the brunt of the fighting and suffered the heaviest casualties. Over the next year, she went on, the southern Communist's political organization was to be badly battered by the CIA's Phoenix program, a covert campaign designed to uproot the Vietcong's rural structure. So growing numbers of North Vietnamese agents were sent south to fill the vacuum. They rebuilt the southern Communist apparatus, and they remained after the war to manage it - often antagonizing their southern comrades, who, despite an abstract commitment to national cohesion, clung to their regional identity. (Karnow, 1983: p. 547)

The North Vietnamese continued the practices of their erstwhile "allies," the Viet Cong, until the ill - fated 1972 Easter Offensive, which was also unsuccessful.

The third and final phase of the Vietnam War, the conventional one, finally succeeded in 1975, after the United States was forced to withdraw due to the high costs of continuing to fight the guerilla war. Thus the period of direct participation by United States ground forces, 1965 - 1972, was a continuous guerilla war with two failed attempts at conventional war. The Viet Cong and Democratic Republic of Vietnam chose which phase the war would be in because they maintained political control of the population throughout, and only attempted conventional war when they felt they had the assets to win.

MACV's only hope of success during these years was to wrest the initiative from the Viet Cong prior to 1968 and North Vietnamese thereafter by winning the political battle over the human terrain of South Vietnam's population. Once the communist cadres were separated from the population they could be defeated in the countryside by conventional force or simply allowed to starve. Operational planning done by MACV, therefore, had to reflect an acknowledgement that the war was a popular one in its guerilla phase. In so doing, its plans needed to pursue the separation of the Viet Cong infrastructure from the population in the coastal plain and Mekong Delta regions by limited force and permanent presence. Conventional operations designed to combat main force units or respond to a cross border invasion by the Democratic Republic of Vietnam should have been a contingency, not the primary focus of theater planning.

MACV failed to realize that the war was firmly in its guerilla phase and continued to place emphasis on countering the final phase threat of large scale military operations in spite of the enemy's continuous use of guerilla war both before and after the 1968 Tet Offensive. The combined campaign plans reflected this in the missions they assigned to their various subordinate units throughout the era of direct involvement by the United States. South Vietnamese air, naval, and ground regular forces received the vast majority of the resources expended in the Vietnam War not directly spent on United States forces and received more attention from politicians and the media than the territorial or police forces. The tasks assigned to these units by MACV, therefore, indicate the relative importance of their missions versus those assigned to the territorial or irregular forces.

The 1966 campaign plan did not explicitly list the tasks for the regular forces of each country involved, implying that both United States and Republic of Vietnam regular forces would share the burden of accomplishing the tasks listed on page 154, which ranged from protection of major military facilities to providing effective air support. In 1967, however, MACV directed:

Although RVNAF is assigned the primary responsibility of supporting Revolutionary Development and US/FWMAF are assigned the primary mission of destroying the main VC/NVA forces and bases, there will be no clear cut division of responsibility. RVNAF General Reserve and ARVN Corps Reserve units will conduct unilateral and participate in coordinated and combined search and destroy operations. US/FWMAF will continue to provide direct support and implicit aid to Revolutionary Development activities. (MACV, 1967: p. 6)

This passage indicates the general foci of the two forces: United States ground troops on conventional operations and South Vietnamese ground troops on pacification. No specific mention is made of South Vietnamese territorial or police forces, although the latter were under the control of the Republic of Vietnam Armed Forces.

The campaign plans for 1968 and 1969 also give United States forces the primary task of defeating the Viet Cong and North Vietnamese main forces but increasingly give the regular forces of South Vietnam that role as well. The 1968 plan states that ARVN regular units "... will extend area security where necessary by conducting provincial search and destroy operation against VC local forces (including the provincial battalions) and against VC/NVA main force units where required." (MACV, 1968: p. 7) The 1969 plan takes this a step a further, directing:

ARVN divisional units will direct their primary efforts to the destruction of VC/NVA main force units. In order to provide maximum ARVN strength for the accomplishment of the primary mission, a gradual phase down of

ARVN battalions in support of pacification will occur. (MACV, 1969: p. 7)

In these years, then, MACV intensified its focus on the conventional war by continuing to fight it with United States forces and drawing South Vietnamese regular units away from the pacification effort and into the large unit struggle.

The 1970 campaign plan distinguishes between territorial and regular forces, and gives the latter the mission to:

1. Locate and neutralize enemy main forces, base areas, and logistics systems in RVN.
 2. Deter enemy incursions into RVN along the DMZ, the Laotian and Cambodian borders, and in coastal waters.
 3. Prevent enemy incursions into consolidation zones and secure areas.
- (MACV, 1970: p.7)

In this case there is no distinction between United States and Republic of Vietnam regular forces, which were given identical missions. The 1971 plan continues this trend, substituting the title "Mobile Field Forces" for regular units and directing, "The primary mission of Infantry Divisions is to conduct mobile operations to locate and neutralize enemy main force units, base areas, and liaison, communications, and logistics systems." (MACV, 1971: p. 8) Thus MACV increasingly employed host nation forces, whose permanent presence is vital in establishing a lasting and credible link with the population, in operations that took them farther away from the population they were supposed to defend. These forces then conducted conventional operations against Viet Cong and PAVN forces whose job was to draw attention away from the "other war."

The Republic of Vietnam's Pacification and Development Plan, which MACV's combined campaign plans were supposed to complement, placed a greater emphasis for

both United States and South Vietnamese military forces on population protection. In a paragraph describing the role of military force in the conflict it states, "Providing security to the Vietnamese people is the major objective of RVNAF/FWMAF." (RVN, 1970: p. I-1-1) The evolution of the South Vietnamese military's role from one of pacification to one of conventional warfare violates the intent of the pacification plan and fails to recognize that the war in Vietnam was a popular one in its guerilla phase.

Combat after - action reports point to the impact of the presence of security forces in the countryside. The 173rd Airborne Brigade's after - action report of Operation Dan Sinh, previously summarized, describes the conditions in the Bong Son plains area prior to the arrival of government forces:

AO Cochise is the 173d Airborne Brigade's most densely populated area of operations, containing approximately 350,000 inhabitants. Of these, an estimated 215,000 are considered as living in areas of Viet Cong control or influence. . . Though rich and fertile, at the same time this "ricebowl" has long been a scourge for both Vietnamese and United States combat elements, as the plains area contains a high percentage of Viet Cong and Viet Cong sympathizers and is the home of two local force Viet Cong units. . . The Bong Son plains area also houses numerous hamlet and village - level Viet Cong units and possesses, in these hamlets and villages, a Viet Cong infrastructure that dates back into the days of French control of Vietnam. (173rd, 1969: p. 1)

Operation Dan Sinh cleaned out the Bong Son plains area but did not do so permanently; once the regular forces departed the area it reverted to Viet Cong control. Thus the concentrated use of conventional forces to clear areas was ineffective because the temporary nature of the security they provided allowed the communists to reestablish control after the units departed to clear another area.

An operation conducted by the United States 11th Armored Cavalry Regiment also underscores the value of the presence of security forces in the countryside. It states:

Operation Dan Tam 81 was successful in its immediate goal of securing the rice harvest operation in the VO DAT - TAN LINH area. The fact that the harvest was accomplished with complete freedom from Viet Cong harassment was no doubt a result of the dual threat imposed by ARVN security forces, and the presence of the Squadron as a mobile force capable of striking anywhere in the area on short notice. The side effects of the operation were several. It was noted that the flow of commerce into the area increased sharply during the period, a direct result of the increased presence of friendly troops and the route security effort. (11thACR, 1967: p. 8)

Unfortunately, the increased presence of friendly troops was temporary, and the departure of the cavalry and its South Vietnamese counterparts from the area left the area open to infiltration and influence by the Viet Cong.

MACV's insistence on increased South Vietnamese participation in the large unit, mobile war stripped the countryside of security forces whose presence could have made government control of the heavily populated coastal plains and Mekong Delta regions a reality. Instead, the task of population control was left to poorly equipped and indifferently led territorial forces. An after action review from the United States 5th Special Forces Group in 1967 lists the equipment used by territorial forces to secure local areas. The entire list is of World War II vintage with the exception of M79 grenade launchers and PRC - 25 radios. (5thSFG, 1967: p. 2) Further, the personnel policies of the Republic of Vietnam exacerbated the problem. Krepinevich writes:

The RVN mobilization law gave the ARVN the cream of the nation's manpower, leaving recruits of marginal ability available for recruitment by police. Pay was low compared with that received by members of the

ARVN performing in comparable positions of responsibility. The effect of these personnel policies was a police force of marginal quality at best. (Krepinevich, 1986: p. 228)

If MACV recognized that the war in Vietnam was a popular one in its guerilla phase its allocation of resources did not indicate this.

General Abrams' LRPTG noted both the nature of the war and the capacity of the North Vietnamese to continue a guerilla struggle for the foreseeable future. Their report states, "Recent statements by NVN's leaders make clear their adherence to the basic principles of protracted war: continued struggle despite temporary reverses, the shift from the offensive to the defensive as necessary, and the shift from primacy of military action to the primacy of political action." (LRPTG, 1969: p. 4) MACV failed to appreciate this capability and continued to escalate the conventional war by increasing South Vietnamese participation in it while reducing the efforts to secure the countryside. Its approach to the pacification effort was, at best, ambivalent and sought success in that area only as a means to free up more South Vietnamese forces to conduct the conventional war. Krepinevich writes of MACV's attitude toward an early attempt at pacification, the Strategic Hamlets program, "MACV's position was to support the Strategic Hamlets program, provided it did not interfere with the broader role MACV had set for the ARVN - conducting offensive operations designed to destroy VC forces." (Krepinevich, 1986: p. 69) MACV, therefore, failed to recognize the dynamics of the Vietnam War and its inherently popular nature. As a result, the operational plans issued by that headquarters did not address the main threat facing the Republic of South Vietnam: the lack of credible, permanent security in the countryside.

The reduction of war to a finite set of variables should make a predictive and positive doctrine possible for warfare. This is not the case, however, due to the large number of combinations and permutations of these variables in their varying quantities. This prompted Clausewitz to write, "Bonaparte rightly said in this connection that many of the decisions faced by the commander-in-chief resemble mathematical problems worthy of the gifts of a *Newton* or an *Euler*." (Clausewitz, 1989: p. 112) It is this phenomenon that describes the next aspect of chaos theory addressed herein: nonlinearity.

IV. THE FRENETIC FEEDBACK OF NONLINEARITY

A. CHAOS, CLAUSEWITZ, AND NONLINEARITY IN WAR

The next trait of chaotic systems in Kellert's definition is nonlinearity. Physical nonlinear systems are those whose equations do not remain constant as the system evolves and, as a result, do not produce proportionate outcomes. James Gleick, author of Chaos: The Making of a New Science, describes nonlinearity using friction, a physical nonlinear system:

"Nonlinearity means that the act of playing the game has a way of changing the rules. You cannot assign a constant importance to friction, because its importance depends on speed. Speed, in turn, depends on friction. That twisted changeability makes nonlinearity hard to calculate, but it also creates rich kinds of behavior that never occur in linear systems. (Gleick, 1987: p.24)⁴

In this case Gleick uses friction as an example of nonlinearity: it is a function of how fast the object is travelling yet the speed of the object is, in part, a function of the amount of friction that is operating on it. On a philosophical level, this means that the relationships between the components of a dynamical system do not remain fixed but change as the system changes over time. In war, for example, the relationship between the strength of the defense versus the attack can change as it interacts with the morale of the two sides involved or that greater increments of firepower do not necessarily translate into greater prospects for victory.

⁴Friction occupies a central place in On War, although Clausewitz's use of the word transcends the physical application of the word and represents the pervasive interference of chance events in war.

Clausewitz identifies several interactions in war besides those in the trinity, all of which are nonlinear and support the accuracy of chaos theory as a metaphor for his ideas in On War. David Ruelle notes that, "... for sensitive dependence on initial conditions to occur, *at least three oscillators are necessary*. In addition, *the more oscillators there are, and the more coupling there is between them, the more likely you are to see chaos*."

(Ruelle, 1991: p. 81) Clausewitz identifies at least four interacting components, or oscillators, in Book One of On War. These are: the opposing sides in a conflict, the ends and means of each side, the aforementioned trinity of the people, armed forces, and policies of a state, and the phenomenon he labels friction and its antithesis, the genius of the commander. These interacting parts are nonlinear and satisfy, at least philosophically, both Kellert and Ruelle's definitions for chaotic systems.

B. THE NONLINEARITY OF OPPOSING SIDES IN WAR

The first nonlinear relationship addressed by Clausewitz in On War is that of the opposing sides. He writes:

War, however, is not the action of a living force upon a lifeless mass (total nonresistance would be no war at all) but always the collision of two living forces. The ultimate aim of waging war, as formulated here, must be taken as applying to both sides. Once again, there is interaction. So long as I have not overthrown my opponent I am bound to fear he may overthrow me. Thus I am not in control: he dictates to me as much as I dictate to him. (Clausewitz, 1989: p. 77)

The interactive nature of the opposing sides employing violence to attain mutually exclusive goals makes the result of this interaction out of proportion to its sum: a nonlinear relationship. David Nichols and Todor Tagarev comment on the implications of this interrelationship in an article entitled, "What Does Chaos Theory Mean for Warfare,"

"If warfare is chaotic, then chaos theory warns us that enemy systems can exist in different states. The implications are that we must be aware of these possible states and, if necessary, be capable of changing our own system's state to counter the enemy's strategy." (Nichols and Tagarev, 1994: p. 57) Clausewitz recognizes this aspect of war and addresses it in his theory, thus philosophically satisfying the requirement for chaotic systems that their interactions demonstrate nonlinearity.

The nonlinear interaction of opposites reveals itself in two distinct manifestations in popular and conventional war. This section contrasts the two from the perspective of an external power intervening in a regional conflict. John Shy approaches the differences in the two types of conflict by characterizing conventional war as a "Western" phenomenon and revolutionary war as "Maoist." He writes:

In the Western tradition, epitomized by Napoleon, military victory was to be achieved quickly, and the seizure or defense of territory was central to the very purpose of warfare. For Mao, long without the means either to seize and hold territory or to win quick victory, space and time became weapons rather than goals. "Protracted struggle" promised to exhaust the enemy, if not militarily then at least politically, as he failed to achieve the quick victory demanded by the Western tradition. (Paret, 1986: p. 839)

In conventional war, as well as the final stage of a popular war, the opposition uses armed force composed of large, concentrated units organized along functional lines and operating under centralized command and control. These units use massive physical force and concentrate in space and time to occupy terrain and inflict military defeat on their adversary. The opposing force may or may not seek total defeat of its adversaries and will offer varying levels of resistance. The Gulf War is an excellent example of a conventional adversary from the United States' viewpoint: Iraq deployed a large, conventional military

force and was defeated by more of the same, with most of the nonlinearity part of the interaction being visited upon Iraq's armed forces.

In popular war, in contrast, the opposition employs small, diffused forces organized in tandem with the region they are operating in and under decentralized command and control. They use limited force targeted at a specific audience and concentrate on the political and psychological areas of the human terrain to inflict political defeat on the external power and its protege' government. Once this is done, the transition to conventional war occurs, and the goals of the insurgents are total, which often produces an asymmetry of motivation that favors them. The war in Vietnam is a good example of this interaction because the Viet Cong operated in this manner except for the more conventional Tet Offensive. After their defeat in 1968 the Communists returned to guerilla warfare until the North Vietnamese conventional invasion made them irrelevant. Further, the Viet Cong's total goals contrasted with those of the United States, which bore the brunt of this political defeat's nonlinearity.

The nonlinear interaction of opposing sides in each type of conflict has implications for the success or failure of an external power such as the United States. In a conventional war, the nature of the adversary places a premium on ensuring the outright military defeat of his armed forces and erosion of his will to resist. Concentration in time and space are crucial and superior firepower, if applied effectively, rules the day. The host government, if any, plays a limited role if the intervener has most of the military power and the willingness to use it. In a popular war, however, the dominant role of the population in the conflict means that concentration on the human terrain is paramount. The host

government is vital to this from the external sponsor's viewpoint because it possesses the means by which the intervener can win the political battle. Firepower takes a back seat, particularly in the populated areas that the insurgents' infrastructure operates, because application of firepower in populated areas contributes to losing the political battle. The nonlinear nature of the opponents' interaction exacerbates the effects of fighting the opponent in a manner that fails to recognize whether the war is of the conventional or internal variety.

The interaction of the United States with its communist enemies, the Viet Cong and North Vietnamese during the peak years of direct participation by United States ground forces was one that possessed the characteristics of a popular war. The communists maintained a focus on the population and sought to destabilize the political situation of the Republic of South Vietnam rather than the outright defeat of the United States and its host. Andrew Krepinevich describes the communists' activities:

While the [US] Army chased its elusive quarry through the country's interior the insurgents continued operating along the densely populated Coastal Plains. Over half of all significant contact with Communist forces in the first half of 1966 took place, not in the interior regions, but along the Coastal Plains. The inference was clear: the insurgents would fight to maintain access to the population while leading the Army on a wild goose chase inland, drawing MACV's maneuver battalions away from the people they were purportedly protecting. (Krepinevich, 1986: p. 180)

The Viet Cong, and later the North Vietnamese, thus used their larger units to draw the United States' combat power away from the critical areas of the conflict so that the communist infrastructure could maintain effective control of the population.

Adding an additional layer of complexity to the interaction of belligerents was the relationship between the Viet Cong and the North Vietnamese. This relationship was not

simply a sponsor - client one, with the Democratic Republic of Vietnam using the Viet Cong as partisans. Rather, the Viet Cong were an independent movement supported to varying degrees by the North Vietnamese until the latter successfully captured their movement after the ill - fated Tet Offensive. The Viet Cong's relationship to the North Vietnamese, never an entirely friendly one due to ethnic and linguistic differences between the two, became one of competition. Larry Cable writes in his book, Unholy Grail:

By late 1966 the North Vietnamese had changed their relationship to the Southern guerrillas. After acting as an external sponsoring power for some twelve to eighteen months, North Vietnam was in pursuit of its own goals by fall 1966. This meant that the Viet Cong had become expendable. The North Vietnamese theory of victory sought success through the enervation of the American and South Vietnamese political will. To the extent that the Americans killed Viet Cong, Hanoi was winning. To the extent that the war was protracted and made inconclusive, Hanoi was winning. (Cable, 1991: p. 239)

Despite the takeover of the insurgency by the North Vietnamese after 1968, the war remained a popular one focused on the human terrain of the population rather than a conventional one bent on the destruction of the United States and South Vietnamese armed forces.

The United States and South Vietnamese, for their part of the interaction, added to the nonlinearity by attempting to fight a popular war in a conventional way. The Viet Cong - North Vietnamese competition was a weakness that a more politically oriented campaign could have seized upon as a way to wrest control of the population from the communists, yet the United States continued to focus its efforts on the destruction of main force units. In 1969 General Abrams' LRPTG concluded, in part, that:

All of our US combat accomplishments have made no significant, positive difference to the rural Vietnamese - for there is still no real security in the

countryside. Our large - scale operations have attempted to enable the development of a protective shield, by driving the NVA and the Viet Cong main force units out of South Vietnam - or at least into the remote mountain and jungle areas where they would not pose a threat to the population. In pressing this objective, however, we have tended to lose sight of why we were driving the enemy back and destroying his combat capability. Destruction of NVA and VC units and individuals - that is, the "kill VC" syndrome - has become an end in itself - an end that at times has become self - defeating. To accomplish the more difficult task of the war - and, really the functional reason for the US to be here - that of providing security to the Vietnamese people - we have relied on numerous, but only marginally effective, ill - equipped and indifferently led Vietnamese paramilitary and police units. The Viet Cong thrive in an environment of insecurity. It is essential for them to demonstrate that the GVN is *not* capable of providing security to its citizens. And, they have succeeded. (LRPTG, 1969: p. 20)

Thus the United States felt the impact of the nonlinearity of the interaction between belligerents because it failed to identify the nature of the conflict and take the initiative from the communists by focusing on the population's security rather than on the enemy's armed forces.

The interaction of the opponents in a popular war, characterized by political struggle over the human terrain of South Vietnam's coastal plains, demanded a response by MACV that appreciated the nature of the war. Campaign plans issued by that headquarters had to emphasize local security in these areas and deploy adequate troops to engage in population control operations. These operations required a major role for host nation forces, permanent presence of government forces at the hamlet level, and elimination of communist cadres and cell organizations, whether they be of indigenous or North Vietnamese origins. In terms of the interaction of belligerents MACV had the specific task of identifying and targeting the most dangerous and likely threat to the security of the population.

MACV failed to identify the most critical threat to the population's security in its combined campaign plans throughout the time of direct involvement by United States' forces in the Vietnam War. All of the reports, from 1966 to 1971, made the overt assumption that Democratic Republic of Vietnam was exercising "... command direction of the VC." (MACV, 1966: p. 152; 1967: p. 4; 1968 - 1971: p. 2) While this was increasingly true after the 1968 Tet Offensive, it was not the case prior to that. That assumption, particularly early in the war, fulfilled the motivated bias of MACV that the war was a conventional one against the Democratic Republic of Vietnam rather than a popular war waged by the Viet Cong.

The intelligence annexes to MACV's combined campaign plans are also indicative of this bias. The 1966 plan states, "The overall goal of the DRV Lao Dong party is the political and military conquest of the RVN." (MACV, 1966: p. 166) It then discusses the activities and locations of various Viet Cong and People's Army of Vietnam units with particular attention paid to regimental size units and making only one mention of Viet Cong cadre strength. (MACV, 1966: pp. 166-170) The annex concludes with a list of enemy capabilities that focus on the military capacity of the Viet Cong to attack targets inside the Republic of Vietnam and a map depicting the probable locations of main force units of regimental size. (MACV, 1966: pp. 171-173) Conspicuous by its absence is any discussion of the Viet Cong's political or psychological warfare activities or capabilities, nor any discussion of the role of the VCI in the war.

The 1967 and 1968 combined campaign plans also view the enemy through the conventional paradigm. In addition to focusing on the Democratic Republic of Vietnam as

the main enemy, the 1967 plan goes on to describe the nature of the enemy's probable strategy:

Enemy composition and disposition of forces indicate that the enemy considers the main battle area to be in Military Region 5 (the central highlands), in view of the important military, political, and economic objectives therein. Its mountains and heavy jungle, and the close proximity to LAOS, CAMBODIA, and NVN make this battle area more favorable to the movement, security, and re-supply of his forces. In this concept, the enemy would create a holding area between the highlands and the delta and maintain sufficient forces in this holding area to pose a sufficient threat to prevent GVN and Allied Forces from reinforcing the main battle area. (MACV, 1967: p. A-5)

Again, MACV focused on the conventional aspects of concentration in time and space to defeat a military opponent rather than on the population and the political objectives of the Viet Cong and Democratic Republic of Vietnam. The goal of occupying the central highlands was not to establish an area from which to operate on interior lines, but to draw resources away from the real main battle area, which was the coastal plains and Mekong Delta regions.

The 1969 plan marked a transition in MACV's assessment of enemy intentions and rightly identified the Democratic Republic of Vietnam as the command entity for the war in South Vietnam. In this case the plan overtly mentions the protracted war strategy of the communists and correctly describes their strategy in 1969:

Realizing that he cannot win a military victory, the enemy is currently resorting to a "fighting while negotiating" stratagem. Apparently he hopes that continuing offensive action in the Republic of Vietnam can win him a diplomatic advantage at the conference table. Despite significant casualties suffered already, the enemy is expected to renew his costly efforts to expand his control of the rural areas, which he views as his springboard for further, widespread subversive action. (MACV, 1969: p. A-2)

This is as close as MACV got to identifying the most serious threat facing the United States and the Republic of Vietnam.

Later campaign plans, for 1970 and 1971, continue to place emphasis on the "fight while talking" strategy, although they mistakenly assume that the Democratic Republic of Vietnam would settle for a compromise solution that established a neutral South Vietnam with a coalition government that had Viet Cong participation in it. (MACV, 1970: p. A-9) Further, the annexes in these years insist that the enemy's greatest weaknesses are vulnerability to air, artillery, and naval gunfire; spoiling attacks; and interdiction of lines of communication. (MACV, 1970: p. A-26) These passages indicate a continued bias toward seeing the enemy in conventional terms: a state - the DRV - pursuing limited aims - a coalition government in South Vietnam - via coercive diplomacy. The actual case was a state sponsoring an insurgency for the revolutionary purposes of seizing political power from the current regime.

MACV's inability to identify the main threat in the first years of its involvement and later to accurately assess the intentions of its adversary hampered its ability to coordinate its efforts with the Republic of Vietnam's Pacification and Development Plan. This plan called for the forces supporting South Vietnam to ". . . vigorously push our attacks into the communist based areas and exploit their weakness to eliminate them completely from pacified areas, and thus create an advantageous milieu so we can increase the quality of life in the future." (RVN, 1970: p. 1) The attacks the pacification plan mentions were to occur in Viet Cong infested areas and the weakness that it alludes to refers to the significant losses suffered by the VCI in the wake of the Tet Offensive and

success of the Phoenix program. MACV's campaign plans, however, generally visualized the enemy in a conventional way and targeted the main forces operating far away from the critical populated areas.

Combat after - action reports almost invariably listed main force units in their intelligence paragraphs, which is another symptom of MACV's focus on the conventional enemy rather than the popular oriented one. One example of this phenomenon is the report submitted by a battalion of the United States 101st Airborne Division in 1970 which listed the 4th NVA Regiment and its constituent elements as its adversary in Operation Jefferson Glenn. (2/327th Inf, 101st, 1970: p. 12) It discussed the capabilities of the enemy unit but made no mention of the political situation in the region or the activities of the VCI. This report is typical of the trend of United States forces to identify the conventional units operating in an area while ignoring the political activities of the main threat.

General Abrams' LRPTG report correctly assessed the threat facing the Republic of Vietnam and the impact of the United States' inability to counter it. It states:

It is not an understatement to say that the GVN and its officials have misgivings about the current situation. They are rightly worried about the situation in the countryside, despite our success in the "war of the battalions." They know that the VC infrastructure is formidable, and that as long as it remains in being it can always regenerate a military threat, as well as be a constant subversive force. (LRPTG, 1969: p. 9)

South Vietnam had plenty of reason to worry as MACV's campaign plans demonstrate. The inability of MACV to correctly identify the main threat facing the Republic of Vietnam until late in the war, as the United States began to end its involvement, left South Vietnam confronting an ongoing insurgency coupled with a major conventional threat.

James J. Wirtz describes the intelligence analysis conducted at the time:

U.S. intelligence analysts focused on the military aspects of people's war, even though they recognized that an unsophisticated application of this framework could lead to oversimplified analysis. As the war progressed, analysts who followed the communist debate over strategy realized that each of the three phases of a people's war embodied a degree of flexibility of tactics, forces, and objectives. (Wirtz, 1991: p. 103)

This flexibility kept the communists one step ahead of MACV, which focused on one aspect of one phase, and illustrates the difficulty in coping with the nonlinear interaction of belligerents in a popular war such as the one in Vietnam.

C. THE NONLINEARITY OF ENDS AND MEANS IN WAR

The next nonlinear interaction explained by Clausewitz in On War is that of the political ends and military means employed by the two opposing sides. He devotes the entire second chapter of Book One to this relationship, which exhibits the traits of nonlinearity.⁵ In it he writes:

As we saw in the first chapter, war, if taken as a whole, is bound to move from the strict law of inherent necessity toward probabilities. The more the circumstances that gave rise to the conflict cause it to do so, the slighter will be its motives and the tensions which it occasions. And this makes it understandable how an analysis of probabilities may lead to peace itself. Not every war need be fought until one side collapses. When the motives and tensions of war are slight we can imagine that the very faintest prospect of defeat might be enough to cause one side to yield. If from the very start the other side feels that this is probable, it will obviously concentrate on bringing about *this probability* rather than take the long way round and totally defeat the enemy. (Clausewitz, 1989: p. 91)

The dynamic nature of the relationship between ends and means in war produces the wide

⁵Clausewitz indicated in a note dated 10 July 1827 that he intended to revise the entire work based on this interaction. Unfortunately, his untimely death in 1831 prevented any further revision of On War.

but finite of number possible outcomes of the conflict. Beyerchen comments on Clausewitz's description of this interaction:

The ends - means relationship clearly does not work in a linear fashion. The constant interplay is an interactive, feedback process that constitutes an intrinsic feature of war. Clausewitz's conception is that the conduct of any war affects its character, and its altered character feeds back into the political ends that guide its conduct. War is, he says, a "true chameleon" that exhibits a different nature in every concrete instance. (Beyerchen, 1993: p. 68)

This relationship, then, is another example of Clausewitz's recognition of war's nonlinearity and becomes part of a larger chaotic system as it interacts with the other components of war.

The nonlinear relationship between the political goals and operational means also points out differences in the two types of war. Conventional war is characterized by centralized control by the state over the means at its disposal in pursuit of goals that may or may not involve total defeat of the enemy. This holds true for both opponents in the conflict, which limits the amount of feedback from the ends - means interaction because both sides seek a military victory to impose their will on the situation. Thus, the link between the military means and political ends is clear and military activity occurs as an extension of policy, not policy itself. Returning to the example of the Gulf War, the United States' goal of driving Iraq from Kuwait was not changed even when the magnitude of Iraq's defeat became apparent. In other words, the major defeat of Hussein's forces did not change the character of the war because the ends had been achieved and were inextricably linked to their means.

Popular war, in contrast, exhibits major feedback for the external power because it faces a politically oriented opponent that seeks total aims and has no overt military force to concentrate on. Mao Tse Tung comments on the political nature of the insurgent force, in this case the Chinese Red Army:

Especially at the present time, certainly the Red Army exists not merely to fight; besides fighting to destroy the enemy's military strength, it should also shoulder such important tasks as agitating the masses, organizing them, arming them, and helping them to set up revolutionary political power, and even establishing organizations of the Communist Party. When the Red Army fights, it fights not merely for the sake of fighting but to agitate the masses, to organize them, to arm them, and to help them establish revolutionary political power; apart from such objectives, fighting loses its meaning and the Red Army the meaning for its existence. (Pomeroy, 1968: p. 175)

The insurgents' political focus on total aims - revolutionary political power - and connection to the population produces two effects: an asymmetry of motivation that favors the insurgents and a blurring of lines between ends and means. The latter phenomenon increases the feedback in this nonlinear interaction because every action has direct political ramifications, the means have, in effect, become policy in a very direct way. In Vietnam, for example, the routine application of massive firepower by United States' forces to defeat guerrillas had the immediate political effect of estranging the population from the host government and its external sponsor.

The variations of the ends - means interaction discussed above pose very different problems for an external power. In a conventional war, the intervener must develop clear political goals and ensure that it has the military capability to carry them out. An important step in this process is determining the relative motivation of the adversary and his military capabilities. Once this is done the armed forces may prosecute the war in

accordance with the bounds established by policy. In popular war, however, identification of the ends and means is not enough. The nonlinear relationship between them places a premium on restraint because military activity directly and immediately influences the political goals, and the inherent asymmetry of motivation makes defeat of insurgency a daunting task if undertaken in a conventional manner.

The relationship between ends and means in the Vietnam War from the United States' perspective indicates that it was a popular war. The United States' goals, rooted in the larger Cold War, were to contain the expansion of communism. The war in Vietnam, therefore, was not one of survival on its part. Further, the United States was not pursuing the positive goal of unifying Vietnam by invading the Democratic Republic of Vietnam; but it was pursuing the negative goal of defending the Republic of Vietnam from internal and external aggression. The Viet Cong, on the other hand, were fighting for their very survival and sought the destruction of the Republic of Vietnam, which was also the goal of the North Vietnamese. This, combined with the Republic of Vietnam's struggle for survival, gave the United States the weakest reason for involvement and the most restrictive goals. Larry Cable writes:

South Vietnam, the Viet Cong/National Liberation Front, and North Vietnam were the primary parties to the conflict; their definitions of victory or defeat and their goals served to constrain the freedom of the United States to impose its own schemata with any legitimate expectation of success. The Johnson Administration was obliged to recognize that the multi - party conflict in which it was immersing the United States arose from cultural, social, economic, and political factors which were endogenous to the region and governed by regional historical trajectories. This recognition must not simply be a matter of rhetorical genuflection; it must be acted upon as a central factor in policy formulation and execution. (Cable, 1991: p. 20)

The nature of popular war, and the Vietnam War in particular, created a major potential for feedback for the United States due to the asymmetry of motivation facing the external power. Thus the relationship between ends and means in Vietnam for the United States was very close and produced nonlinear effects.

Successful operational planning in Vietnam required an active recognition of the asymmetry of motivation and the immediate and magnified interaction of ends and means in the theater of operations. MACV's challenge was to apply enough force to eliminate the communists' political infrastructure within South Vietnam and isolate their main force units while providing security for the population and building confidence in the Republic of Vietnam's regime. Indiscriminate use of force, harsh treatment of the population, and overreliance on United States forces rather than those of South Vietnam would have immediate and negative consequences both in the theater of operations and in the United States. The line between force and restraint was a very thin one in Vietnam, and this required close scrutiny, clear guidance, and careful planning on the part of MACV.

MACV failed to adequately shield the population from the effects of indiscriminate violence associated with military operations in inhabited areas. Part of the reason for this is the lack of emphasis on rules of engagement designed to limit collateral damage and the liberal nature of these rules. None of the combined campaign plans mentions any rules of engagement or guidance on the use of force in the main text of the document. Discussion of rules of engagement is relegated to an annex that directs how South Vietnamese and United States forces would coordinate their actions. The lack of guidance on application of force in populated areas shows an almost complete disregard for the security of the

population and the feedback effects of indiscriminate violence on the political atmosphere in the Republic of Vietnam.

If MACV had deemed the rules of engagement worthy of inclusion in the main body of its campaign plan, there is no guarantee that the population would have been any more secure because the guidance itself left ample room for diverging interpretations and misuse. The 1966 and 1967 plans offer identical guidance on the employment of massive firepower in hamlets:

Artillery fire, naval gunfire, and air strikes in RVN against known or suspected VC targets in hamlets and villages occupied by noncombatants are governed by the following:

- (1) All attacks will be controlled by an airborne or ground FAC, ground observer or RVNAF observer and will be executed only after US-GVN-RVNAF approval, as appropriate.
- (2) Hamlets and villages not associated with ground operations will not be attacked without prior warning (by leaflets and/or speaker systems or other appropriate means) even though light fire is received from them.
- (3) Hamlets and villages may be attacked without prior warning if the attack is in conjunction with a ground operation involving the movement of ground forces through the area, and if, in the judgement of the ground commander, his mission would be jeopardized by such warning. (MACV, 1966: p. 185; 1967: p. I-6)

Given the natural and understandable reluctance of commanders to sustain unnecessary casualties clearing a hamlet with ground troops, indirect fire or air strikes more often than not were needed to avoid "jeopardizing the mission." Further, getting permission from one's higher headquarters to employ these means was relatively simple, and the prior warning accorded the citizens of a targeted hamlet did little to compensate them for the damage and harassment of becoming refugees and having their homes destroyed. The 1968 and 1969 plans contain the same basic guidance, with the concomitant results of continued feedback of the means employed into the ends sought.

The 1970 and 1971 combined campaign plans also neglect to mention any guidance on the application of force in populated areas in the main body of the plan. In the coordination annexes the plans do not spell out the rules of engagement but do reference a MACV directive that clarifies the use of force in hamlets and villages. Again, the rules of engagement are not given the emphasis they deserve in a popular war, and the indiscriminate application of massive firepower continued with the predictable effect of worsening the political situation in the Republic of Vietnam by alienating the peasants whose support the government was trying to gain.

MACV's combined campaign plans again contrasted with the Republic of Vietnam's Pacification and Development Plan, which governed the effort to provide security for the population in South Vietnam. The 1970 plan identifies zones of action in which different activities were to occur. The least secure zones, clearing zones, were those areas dominated by the Viet Cong and in which main force units routinely operated. Regular forces were operate in these zones to eliminate or remove the main force presence so that pacification efforts could begin. Even in these zones, which had the heaviest enemy presence, the plan sought to limit the impact of military operations on the population. It states:

Clearing Zones. Operations in this zone concentrate on VC/NVA main forces to prevent their intruding into consolidation zones. Rules of engagement for the clearing zone must emphasize that civilians are not unnecessarily exposed to friendly fires. The objective is to separate the population from the enemy in order to facilitate establishment of effective security. (RVN, 1970: p. I-1-5)

MACV's failure to stress the importance of protecting the population from friendly fire via rules of engagement or other guidance on the application of force contradicted the goals

of the pacification and development plans, which addressed the most important aspect of a popular war: security of the population.

Combat after - action reports make note of the problems associated with operations in inhabited areas and express frustration over the enemy's habit of using villages and hamlets as hiding places and cache locations. The United States 1st Cavalry Division report of the Pleiku Campaign in 1965 notes:

Search and destroy operations where the enemy and innocent civilians are intermingled continues to present problems. If an operation is imminent, women and children normally will hide in holes for protection against artillery and small arms. In areas where it is suspected that innocent personnel are involved, a recommended solution is to have Vietnamese interpreters call into holes before clearing them. (1st CAV, 1965: p. 130)

The normal method of clearing holes and trenches was to throw fragmentation grenades in them, which added to the casualties suffered by civilians who hid in them to escape artillery and air strikes. The Viet Cong knew the political and psychological impact that indiscriminate violence had on the population and located its units accordingly. Further, the apparent weakness stemming from the communists' lack of heavy firepower was a political strength because they did not suffer from the same feedback effects that the United States and Republic of Vietnam did. MACV's inability to address the impact of its means on the ends it was seeking further hindered the United States' war effort.

General Abrams' LRPTG made note of the impact of United States military operations in Vietnam, characterizing them as "... major agents of social change in South Vietnam." (LRPTG, 1969: p. 23) The lack of effective rules of engagement or concrete guidance on the use of force in populated areas was one such agent. Eric Bergerud comments on the guidance provided by MACV:

Yet, even if rigidly adhered to, the regulations permitted the use of huge amounts of firepower. And, as events would show, the South Vietnamese rarely objected to the American commanders' choices of weaponry. This is hardly surprising for ARVN was, if anything, quicker to utilize whatever support was available than were U.S. units. Furthermore, the ROE were not always understood properly by American officers; they were also frequently ignored. Lastly, the ROE were bitterly resented by many combat officers who sincerely believed that they increased American casualties. (Bergerud, 1991: p. 88)

Thus the combined campaign plans issued by MACV contributed to the problem of nonlinear feedback of military means into the political ends characteristic of popular wars by failing to protect the population with clear and robust rules of engagement.

D. NONLINEARITY AND THE TRINITARIAN VIEW OF WAR

The third nonlinear interaction is one also addressed in the discussion of Clausewitz's overall conception of war: the Trinity of the people, armed forces, and policies of a state. This metaphor describes the character of each of the belligerents in war, and represents one of the four interacting parts of the whole. He writes of the Trinity:

War is more than a true chameleon that slightly adapts its characteristics to the given case. As a total phenomenon its dominant tendencies always make war a paradoxical trinity - composed of primordial violence, hatred, and enmity, which are to be regarded as a blind natural force; of the play of chance and probability within which the creative spirit is free to roam; and of its element of subordination, as an instrument of policy, which makes it subject to reason alone. (Clausewitz, 1989: p. 89)

He goes on to assert that one cannot fix arbitrary relationships between the components of the trinity. The emphasis of this passage on the dynamic nature of the relationship between the elements is a clear indication of its nonlinearity. Beyerchen writes:

"Although the passage is usually taken to mean only that we should not overemphasize

any one element in the Trinity, Clausewitz's metaphor also implicitly confronts us with the chaos inherent in a nonlinear system sensitive to initial conditions." (Beyerchen, 1993: p. 69) Thus Clausewitz's Trinity represents yet another nonlinear interaction in war that, in turn, interacts with the other components of the dynamical system that produces a semblance of a chaotic system.

The interaction of the components of the Trinity determines the nature of the belligerents and differs according to the type of war being fought. In a conventional war, the state and population "magnets" interact to generate military power. The more war approaches its total form, the more the state must mobilize society, and the intensity of the bond between these components varies with the intensity of the goals pursued by the state. Thus conventional wars exhibit the centrality of military power and the importance of a state's capital as critical components. The Gulf War illustrates this: The United States' preponderance of military power after Operation Desert Storm allowed it to end that conflict and conclude a peace on its terms.

Popular war, on the other hand, exhibits the primacy of political power and the criticality of the human terrain as the "people" leg of the Trinity interacts with that of the state or counterstate during the first two phases of the conflict. The totality of the insurgents' goals and the difficulty of an external power to influence the population makes competing in this political realm difficult, unless the host government enjoys effective control over the population. The battle is, quite literally, over the hearts and minds of the people and this places the role of the military in a subordinate role to that of the state - population interaction. In the Vietnam War the United States focused on the military

aspects of the conflict and lost because its activities were disconnected from the population and were, in some cases inimicable to it. The Viet Cong, in contrast, successfully maintained their ties to the population and persevered in spite of military defeats.

Clausewitz identifies the critical product of the interaction of the Trinity: the center of gravity. He writes, "Out of these characteristics a certain center of gravity develops, the hub of all power and movement, on which everything depends. That is the point against which all our energies should be directed." (Clausewitz, 1989: p. 595) This center of gravity is different for the two types of war and the intervening power must know the difference in order to successfully prosecute the war. In conventional war, the primary product of the Trinity, military power, creates this center of gravity. To subdue them one must either defeat the opponent's armed forces or occupy enough strategic terrain to cause him to submit. In popular war, however, the center of gravity arises from the political connection between the population and the state or insurgents, depending on the viewpoint. This center of gravity is the link between the insurgents and the population and is manifest in the organization's infrastructure, and an external power must target this link without alienating the population from the host government.

Correct assessment of the product of the Trinity's interaction, the center of gravity, is a critical task for an intervening power because it determines the appropriate policy response. In a conventional setting, a response that relies primarily on military power is efficacious because it counters the enemy's center of gravity: its military power. Destruction of this power renders the state and its population vulnerable and will produce

a peace settlement unless the war changes into an internal war. In a popular war, however, the insurgents' center of gravity demands a different response. Nathan Leites and Charles Wolf describe the infrastructure of an insurgency as a production system that transforms popular support into material and political power and, as such, represents the center of gravity of an internal war. They write:

Counterinsurgency is primarily a counterproduction effort, rather than an effort to annihilate forces or acquire territory. The aim of successful counterinsurgency is to counter R[ebellion]'s ability to produce and reproduce forces as well as "harden" the structure of government authority so it can withstand R's attack while the essential counterproduction effort is gaining momentum. (Leites and Wolf, 1970: p. 84)

This counterproduction effort attempts to separate the insurgents' infrastructure from its resource base, the population, and then to destroy it. As a result, it more closely resembles a police operation than a military operation because of the requirement to identify the insurgents then to use restraint in eliminating them to prevent damage to the population at large.

In Vietnam, the United States faced an opponent whose center of gravity resided in the link between itself and the population: an entity known then and now as the Viet Cong Infrastructure (VCI). The dominance of this link rather than the one between the PAVN and main force Viet Cong units and the Democratic Republic of Vietnam indicates that the Vietnam War was of the popular variety. Dale Andrade', author of Ashes to Ashes: The Phoenix Program and the Vietnam War, writes in his preface:

In fact, the VCI provided the central figures in the communists' strategy in South Vietnam. They carried out Mao Tse-tung's dictum that revolutionaries should be like fish swimming in the sea of the people. The VCI - not the North Vietnamese Army or the Viet Cong military units - were the fish. They were the men and women who used every possible

means to assure that communist ideology took hold in the countryside and that the Saigon government was discredited in the eyes of the people.
(Andrade', 1990: p. x)

The fact that the communists maintained the initiative during the course of the war makes this center of gravity all the more important and cements the idea of the Vietnam War as an internal one.

The task before MACV was the proper identification and subsequent targeting of the enemy's center of gravity and the preservation of its own. Successfully targeting the VCI must more closely resemble a police operation than conventional combat, because the VCI was integrated into the population and a massive assault on the latter would only estrange it and exacerbate the situation. MACV's center of gravity resided in its most precious resource, political will in the United States. Operational planning, therefore, had to focus on the VCI's destruction while preserving the political will of the United States to continue the war. Massive collateral damage, large casualties on the part of United States ground forces, and demonstrations of strength by the communists such as the Tet Offensive would all be inimicable to MACV's mission.

MACV increasingly recognized the importance of the VCI as the years of direct United States involvement continued, but it never gave the VCI the central place it deserved as the communists' center of gravity. Rather, MACV's operational plans located the enemy's center of gravity in the Viet Cong and PAVN main forces operating in the central highlands. The 1966 plan makes no mention of the VCI at all in its text, and lists it only as a statistic in the intelligence annex with no analysis of its activities or capabilities.
(MACV, 1966: p. 168) At the beginning of direct United States involvement in the war,

then, MACV largely ignored the neutralization of the VCI, preferring to leave this task to civilian agencies or the Republic of Vietnam.

The 1967 combined campaign plan shows an increased awareness of the VCI's role but stops well short of identifying it as the main opponent. The plan states, "Throughout this campaign increased emphasis will be given to identifying and eliminating the VC infrastructure and to small unit operations designed specifically to destroy the guerrilla force." (MACV, 1967: p. 4) The rest of the plan, however, fails to address the VCI in a meaningful way: the intelligence annex mentions it only in passing and assumes that the communists are attempting to gain strategic mobility by introducing main force units into the central highlands. (MACV, 1967: p. A-2) The focus of the plan is clearly on the large unit war, not the political struggle being waged by the VCI in the coastal plains and Mekong Delta.

The 1968 and 1969 campaign plans give even more attention to the VCI, devoting an entire annex to operations designed to eliminate the threat posed by their activities, yet the main focus of the plans continues to be the war against main force units. In the section detailing goals for the measurement of success in Vietnam, elimination of the VCI is the fourteenth goal out of twenty-five in 1968 and the eighth out of ten in 1969. (MACV, 1968: p. 4; 1969: p. 5) MACV's recognition of the VCI as a major threat continued to expand but also continued to fall short of identifying the VCI as the major threat.

The 1970 and 1971 campaign plans represent MACV's best estimate of the importance of the VCI. In the former the elimination of the VCI is included in the actual mission statement. (MACV, 1970: p. 2) The counter VCI effort continues to have its

own annex, moving up from Annex J in 1968 and 1969 to Annex C in 1970 and 1971.

The 1971 plan gauges the importance of the anti - VCI campaign:

The degree of success of the RVN counterinsurgency effort is directly related to the success in accomplishing this objective. It is therefore axiomatic that an aggressive and hard - hitting attack on the VC infrastructure is as important as, and must be accomplished in conjunction with, the war against NVA and VC military forces. While the attack on the VC infrastructure cannot be successful without local security resulting from military operations, the attack against the VC/NVA will not produce lasting results unless the VCI, which is the foundation of the overall Communist effort, is neutralized. (MACV, 1971: p. C-3)

MACV's recognition of the VCI as the communists' center of gravity came too late, however, because the United States had failed to protect its own center of gravity adequately and was in the process of withdrawing.

Neutralization of the VCI remained a top priority of the Republic of Vietnam's Pacification and Development Plans yet MACV's plans did not share this approach until 1970. The pacification plan has as its second objective (immediately following territorial security):

Neutralize the VC Infrastructure and expand the rule of law and order. All local forces must cooperate closely with the people in neutralization of the enemy infrastructure in order to insure a peaceful, happy life for every man. Increase the pressure with sharp attacks on the enemy infrastructure by the effective use of the Phung Hoang [Phoenix] organizations at every level. (RVN, 1970: p. 6)

This emphasis contrasts with MACV's pre 1970 prioritization of the counter VCI effort and attempts by MACV to separate that effort from its campaign plans is indicative of MACV's inability to recognize the communists' center of gravity.

Combat after - action reports paralleled MACV's increasing awareness of the VCI and reflected its emphasis on the large unit war. Early reports contain little or no

reference to the VCI but by 1969, a report by the 173rd Airborne Brigade mentions that the Viet Cong in their area of operations, "... possessed, in these hamlets and villages, a Viet Cong infrastructure that dates back into the days of French control of Vietnam." (173rd Airborne, 1969: p. 1) This not only indicates that units noted the presence of VCI but also demonstrates the longevity of the VCI in the countryside. This permanent presence of VCI intermingled with the population put the United States and Republic of Vietnam at a significant disadvantage in terms of contact time with the population. MACV's reluctance to make the VCI a top priority only exacerbated the situation.

General Abrams' LRPTG also noted the vital role played by the VCI in the Vietnam war and recommended that, "Combat operations after July 1970 should be only those required to reduce the irreconcilables, the hard core VC small units, and the VC infrastructure." (LRPTG, 1969: p. 14) July 1970 was supposed to be the end of the large unit war after the successful destruction of staging areas in Cambodia, Laos, and North Vietnam by air and, in the case of the former two, ground campaigns. In spite of the awareness of the importance of the VCI and the increased emphasis placed on its elimination by MACV, the large unit war remained paramount. Dale Andrade's comments on the dynamics of the United States' counter VCI program in Vietnam:

Unlike enemy guerrilla units the infrastructure must remain among the people in order to keep the revolution alive. Yet American and South Vietnamese units chased the guerrillas while the VCI was left virtually untouched during the early phases of American involvement in Vietnam. The political infrastructure must be the primary target from the onset of any counterinsurgency effort. In Vietnam both the GVN and the United States waited too long. (Andrade, 1990: p. 283)

MACV never made the counter VCI effort its primary focus, and it waited until 1970 to

give it equal footing with the conventional war. Its failure to see the Vietnam War as a popular struggle rather than a conventional one contributed to this myopia and allowed the communists to cement their relationship to the people.

E. NONLINEARITY AND FRICTION IN WAR

The last nonlinear phenomenon in war is the presence of Clausewitz's concept of friction, which also gets its own chapter. He sums this phenomenon up in the following way: "Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war." (Clausewitz, 1989: p. 119) He goes on to describe the relationship of friction to every other component of war: "This tremendous friction, which cannot, as in mechanics, be reduced to a few points, is everywhere in contact with chance, and brings about effects that cannot be measured, just because they are largely due to chance." (Clausewitz, 1989: p. 120) Just as friction in a physical system is nonlinear, so it is with war in Clausewitz's theory. Nichols and Tagarev also identify it with chaos theory:

Basically there will be events in war, perhaps as a result of chance, that have an effect out of all proportion to their apparent importance. This is an exceedingly difficult form of nonlinearity to anticipate, but it can be taken advantage of once it happens. The German doctrine of *Auftragstaktik*, which allowed initiative on the part of junior commanders, was designed to do precisely this. (Nichols and Tagarev, 1994: p. 56)

Clausewitz's conception of friction, then, is inherently nonlinear and interacts with every component of the larger system, which is chaotic in nature.

Friction also manifests itself differently in conventional and popular wars. Garry Wills differentiates between two types of friction in his book, Uncertain Trumpets: "A second way that war slips out of control is through what Clausewitz calls friction

(*Friktion*) - the perpetual failure of all parts of a military action to mesh because each rubs up against different obstacles, external and internal." (Wills, 1994: p. 86) Internal friction is the accumulation of errors within the system of one belligerent independent of the activities of its opponent. External friction, on the other hand, is that produced by the interaction of opposing sides. In conventional war, friction of both types occurs yet rarely feeds back into the political realm because of the relative "separation" of military means and political ends. Further, it can be overcome by redundancy and increases in material and technological solutions because of the aforementioned limited feedback of military means into political goals. In the Gulf War, for example, the United States was able to overcome the possible friction caused by poor weather at the outset of the ground war via advanced technology. Even if the ground war had been delayed, however, the lack of feedback in the ends - means interaction meant that it could have still been successful at a later date.

In popular war, in contrast, the tight linkage of political goals and military activity makes the impact of friction potentially critical to both. Due to the political nature of popular war, technological solutions are of limited use and increased increments of firepower can be detrimental. The United States clearly had an advantage in technology and firepower, yet it was unable to translate that into victory in Vietnam. When friction did intervene, as at My Lai, the political consequences for the United States were devastating.

The varying influence of friction in popular and conventional wars means that an intervening power must be sensitive to the solutions it applies to combat it. In

conventional wars, technological and material solutions are useful and contribute to victory. In popular wars, on the other hand, these solutions may have no effect or may be positively damaging to the attainment of political goals. Further, friction has a greater effect on the intervener in a popular war because the manifestations of that friction have immediate political ramifications, which, in turn, have a magnified impact on the intervener because the struggle is not one of survival.

In the Vietnam War, as in any war, friction dominated the battlefield yet technological and material solutions proved ineffective in combatting it. Robert McNamara confronts this reality in his postmortem of the Vietnam War:

We failed then - as we have since - to recognize the limitations of modern, high - technology military equipment, forces, and doctrine in confronting unconventional, highly motivated people's movements. We failed as well to adapt our military tactics to the task of winning the hearts and minds of people from a totally different culture. (McNamara, 1995: p. 322)

Firepower and technology proved to be an effective means of countering internal friction and limiting casualties but was inimicable to the success of defeating the insurgency and winning the support of the population. Eric Bergerud addresses this paradox in his book, The Dynamics of Defeat:

In theory, American troops on pacification duty were there to protect the villagers and support the GVN's efforts to create political support, on one hand, and "kill VC" with the least possible cost in American lives, on the other. U.S. combat methods were well enough suited for the second half of this mission, but they were very bad for the first. (Bergerud, 1991: p. 174)

The combat methods alluded to in this passage refer to the use of material solutions to the problems of friction. The preponderance of physical power enjoyed by the United States was unable to overcome the effect of friction in internal wars such as the one in Vietnam

because it was applied in a conventional manner that did not recognize the negative impact it was having on the political spectrum of that conflict, both in the United States and in the theater of operations.

The role of friction in a popular war, with its political ramifications, demanded operational planning that sought to limit its effects rather than magnify them. Such plans should have carefully limited the amount and type of firepower employed and concentrated it in remote regions. The inherently local and political nature of the conflict meant that MACV had to decentralize operations to the local level and pay close attention to the political ramifications of its attempts to overcome friction. Indiscriminate firepower, large scale combat operations, and the use of technology to overcome friction would reduce United States' casualties but would have the simultaneous effect of harming the political goals for which the United States was fighting.

MACV failed to keep friction's effects at the tactical level because it sought to counter tactical level friction with firepower and technology but did not attenuate the impact of those solutions on the psychological and political realms of the war. Guidance for the use of air strikes and naval gunfire in the combined campaign plans issued by MACV is evidence of this. All of the orders from 1966 - 1971 list identical tasks to be accomplished by the air and naval arms. Invariably, the top missions assigned to the Vietnamese and United States air forces were close air support for ground forces, logistic support, interdiction of cross border infiltration routes, and air offensives against "known or suspected" main force units and bases. (MACV, 1966: p. 159; 1967: pp. 29-30; 1968: pp. 23-24; 1969: pp. 23-24; 1970: pp. 28-30; 1971: pp. 28-30) The 1967 plan focused

on destruction of these main force bases using air power followed by ground operations.

It states, "Maximum use will be made of B-52 bomber strikes and other Air Force and Naval firepower, with rapid follow-up by ground forces to complete neutralization."

(MACV, 1967: p. H-2) These forces represented answers to friction because they reduced casualties that would be sustained by ground forces operating in a hostile area but, when coupled with the aforementioned liberal rules of engagement, created political friction by alienating the population.

MACV's operational planning gave air power and naval gunfire a major role in the war to reduce friendly combatant casualties, yet these same policies contradicted the Republic of Vietnam's Pacification and Development Plan by causing widespread damage to the civilian population. The pacification plan states:

Special care and precaution will be exercised in the conduct of military operations in populated areas including populated areas in the clearing and border surveillance zones. Emphasis will be placed on minimizing noncombatant casualties and destruction of civil property through restraints placed on indirect and aerial fire support. (RVN, 1970: p. I-2)

The tasks listed for air and naval forces and directives to use B-52 strikes in base areas, known as clearing areas in the pacification plan, conflicts with the effort to give the population meaningful security. This attempt to counter friction and save combatant casualties had the unpleasant side effect of driving the population into the arms of the Viet Cong, who could and did use the indiscriminate use of firepower as a propaganda tool.

Use of organic indirect fire assets also saved friendly forces' lives but contributed to the alienation of the population by causing casualties among them. South Vietnamese military personnel were initially reluctant to employ indirect fire but their association with

the United States Army soon convinced them of the efficacy of it as a means to save lives.

The American 1st Cavalry Division's after - action report of the Pleiku Campaign states:

US advisors too have become more optimistic, not so much about the eventual defeat of the Viet Cong, but that the ARVN commanders will be more receptive concerning adoption of concepts that heretofore have been belittled or rejected. For example, advisors with the ARVN Airborne Brigade are confident that the dramatic demonstration of what close support artillery can do for infantry will go far to convince the brigade of the desirability of training officer forward observers. (1st CAV, 1965: p. 124)

The effect of that close support artillery was equally dramatic for civilians caught in it and their resulting sympathy for the Viet Cong, who refrained from using it (out of necessity, to be sure) is understandable. Thus MACV's response to friction - firepower - had dire consequences for the population and the political aims which its plans were designed to obtain.

General Abrams' LRPTG emphasized the impact of United States military operations on South Vietnam, although it did not specifically address the indiscriminate use of air, naval, or artillery assets. "Every action of US forces," it concludes, "has socio - psychological implications." (LRPTG, 1969: p. 23) Larry Cable addresses MACV's failure to take note of this statement:

... American doctrine and its tactical implementation would result in significant civilian casualties or social dislocation. Either of these would simply provide grist for the insurgents' propaganda mill. The dependence upon heavy firepower central to U.S. doctrine, particularly the emphasis upon the employment of artillery and aerial bombardment in harassment and interdiction or area denial missions, worked to assure that neutral or potentially friendly civilians would be caught in the middle and converted into either rootless refugees or insurgent activists. (Cable, 1986: p. 283)

MACV's operational planning, then, attempted to use firepower as a solution to friction

for the purpose of saving the lives of friendly combatants and maximizing the destruction on the enemy. The nonlinear feedback of the policies, however, ultimately stymied the efforts of the Republic of Vietnam to win the population to its side. This attempt, the central one in a popular war, was crucial to success in Vietnam but was undermined by policies that simultaneously combatted operational friction while creating strategic friction.

The four interacting parts of war addressed by Clausewitz: friction, the "paradoxical trinity," ends and means, and opposing sides, all represent nonlinear dynamical relationships. Alan Beyerchen points out, "*On War* is suffused with the understanding that every war is inherently a nonlinear phenomenon, the conduct of which changes its character in ways that cannot be analytically predicted." (Beyerchen, 1993: p. 61) When combined with the fact that these components of war interact in a nonlinear fashion with each other in addition to internally, the idea of Clausewitz's theory as a philosophical chaotic system gains even more credence.

V. ORDER IN CHAOS

A. CHAOS, CLAUSEWITZ, AND LINEARITY IN WAR

The nonlinearity of these interactions in war does not imply that no linearities exist within the system, however. Clausewitz clearly identifies such linear relationships as the decisiveness of superior numbers in an engagement if applied at the critical time and place and the presence of a decisive center of gravity on each side of the conflict. (Clausewitz, 1989: pp. 194, 617) Likewise, linearities may exist in a chaotic system such as the relationships specified in Newton's laws of motion. Like these laws, however, the applicability of these linearities depends on other variables. Just as Einstein's general theory of relativity pointed out that Newton's laws were not universally applicable, Clausewitz points out that superior numbers are not universally decisive in war. (Clausewitz, 1989: p. 137) Chaotic systems, then, may contain both linear and nonlinear relationships and, indeed, exhibit a mixture of predictability and unpredictability characterized by the next feature of chaos theory examined in this paper.

Linear relationships also play a part in distinguishing popular from conventional war. The center of gravity, for example, is typically a linear product of a nonlinear interaction between the armed forces, state, and population of a belligerent. It is linear in that it can be identified and targeted, and concentration on the center of gravity will yield a proportionate outcome. Superiority in numbers is another linearity exhibited by both types of war. The difference between the two is a qualitative one because the center of gravity in a popular war resides mainly in political power while that of a conventional war is mainly in military power. Superior numbers in a conventional war mean concentration in

space and time to apply massive physical force but in a popular war it means concentration on the human terrain to apply political force. Leites and Wolf comment on the role of superior numbers in conventional and popular wars:

Still, as noted earlier, an important contrast exists between force ratios in counterinsurgency and in conventional wars. The contrast arises from the fact that where there is a front line in the battle area, the defender generally has a strong advantage, one further strengthened by defensive fortifications. Consequently, although there are major exceptions - Israel's rout of much larger Arab forces in the six-day war of June 1967 is a striking example - the familiar planning factor of two or three to one in favor of the defender reflects this advantage. Where there is no front line, as in counterinsurgency, this model no longer applies, and it is more appropriate to use an air-defense model. The defender does not know where an attack may come. Hence, even if he is able to keep an advantage by maintaining a high-level alert at each of the targets, there are so many targets to defend that the aggregate force ratio becomes much larger than that of the attacking force. (Leites and Wolf, 1970: p. 86)

The dispersed nature of the insurgents' military power makes it difficult to achieve numerical superiority at any given point because the defender does not know where or when the insurgents will attack. The insurgents thus enjoy an advantage similar to operating on interior lines where they can defeat the defender in detail. The defender, for his part, must now have an aggregate superiority of numbers at far greater than three to one in order to make up for this disadvantage. The linear relationship of superior numbers to victory holds, as long as those numbers reflect an appreciation of the type of war the external power is involved in and are deployed and employed accordingly. Thus the physical concentration of force in the Gulf War yielded military victory whereas the same type of concentration produced defeat in Vietnam for the United States. Numbers count, therefore, but in qualitatively distinct ways.

The implications of the different types of linearities present in conventional and popular war for an external power are manifest in the different types of forces that are appropriate for each conflict. Conventional wars are best fought by conventional forces, whose specialty is concentration in a physical way and employment of massive firepower. Popular wars, on the other hand, should be fought mainly by counterinsurgency forces, whose specialty is concentration in a psychological and political way with discriminately applied violence. Further, the host government is the touchstone for the successful prosecution of a popular war. Superior numbers count but more closely resemble a police force for popular wars than the purely military numbers associated with conventional war.

B. LINEARITY AND THE VIETNAM WAR, 1966 - 1971

The Vietnam War is an excellent example of how linear relationships in war depend as much on qualitative measures as quantitative. Although the United States forces deployed in Vietnam were of good quality - both in the physical and psychological sense of the word - they were more suited to a conventional war than a popular one. By any comparison of physical power - firepower, material, technology, GNP, etc. - the United States should have been successful by a wide margin. This was not the case, however, because the United States approached the linearity part of war from a conventional standpoint. Rather than focusing its attention on the population, it focused on the communist main force units who existed for the very reason of drawing the United States' attention away from the political battle being waged over the human terrain.

Krepinevich writes:

A USIA study prepared for the president and presented on 27 February [1966] noted that "the principle problems facing us in obtaining the support

of the Vietnamese population are inadequate security and ineffective Government." The USIA researchers concluded, "The population is largely apathetic and is primarily interested in ending the twenty years of war; they care less as to which side will win, although there appears to be a substantial degree of approval of the Viet Cong." (Krepinevich, 1986: p.139)

Further, the United States' concentration of forces to conduct large unit operations to defeat the communist main forces ensured that there were never enough forces available for pacification duty, which required a permanent presence at the hamlet level.

The role of superior numbers that confronted MACV demanded a response that placed a dispersed, permanent presence of police forces at the hamlet level throughout South Vietnam. Operational planning had to emphasize the pacification effort and distribute resources accordingly by treating the conventional war in the central highlands as a contingency and adjunct to the main operation of pacification in the Mekong Delta and coastal plain regions. Again, this required an integrated and politically sensitive response that devoted a great deal of attention to the host country's involvement.

MACV's operational planning failed to fulfill the requirement to place qualitative and quantitative emphasis on pacification by devoting most of its attention to the conventional aspects of the war. Each of the combined campaign plans issued by MACV through 1969 during the years of direct United States involvement contains a map that designates priority areas on which subordinate units were supposed to concentrate. The plans for 1970 and 1971 contain maps that designate Viet Cong and People's Army of Vietnam bases which subordinate units are supposed to attack. All of the orders also contain specific guidance for each Corps Tactical Zone (CTZ), a geographic region within which corps sized units made up of both American and South Vietnamese forces operated.

The combination of priorities on the maps, enclosed at Appendix A, and the prioritized task list for each CTZ show that MACV did not assign the populated rural areas the emphasis they demanded as the critical areas of the war effort in either a qualitative or quantitative way.

The 1966 order's priority efforts were in the right general location on the map - the coastal plains and Mekong Delta regions, but concentrated around major cities such as Danang and logistics area such as Cam Ranh Bay. (MACV, 1966: p. 161) Although these area were important, more vital were the rice producing regions that linked these provincial cities together. Further, the tasks assigned to the CTZ commanders begin with the mission of defending logistics bases as the top priority, followed by defense of major cities, clearing of designated areas, opening of major highways, then controlling the rice producing areas in each sector. (MACV, 1966: pp. 155-8) It was in this last area that the main battle was taking place, not in the governmental centers or logistics bases. All things considered, however, the 1966 order represents a fair start from the prioritization standpoint because it does not designate the central highlands as a priority area and at least mentions the pacification effort in the rice producing regions.

The 1967 combined campaign plan represents the best effort by MACV to graphically depict the regions of real importance in the war and assign tasks to subordinate commands that were consonant with pacification. The map designates the entire coastal plains and Mekong Delta regions as "Areas for Priority of Military Offensive Operations." (MACV, 1967: Encl. 1) In so doing, MACV correctly identified the critical region of the war but qualitatively missed the mark by designating the areas as having priority for

"military offensive operations." Given MACV's focus on the large unit war and the liberal use of firepower by friendly forces, this phrase may have been an unfortunate choice for the inhabitants of those areas for reasons already discussed.

According to the 1967 plan Army of the Republic of Vietnam forces in each region had the missions of population security in the national priority areas and other populated regions, defense of large towns and cities, opening of major highways, control of rice and other critical resources, and destruction of Viet Cong and North Vietnamese main forces in the regions designated for offensive operations. (MACV, 1967: pp. 9-11) The United States forces in each CTZ were to destroy main force units in the areas designated for offensive operations, support the pacification effort, destroy main force units outside the priority areas, open major highways, and assist in the control of critical resources. (MACV, 1967: pp. 11-13) The allocation of forces to the critical areas is laudable from the quantitative standpoint but fails the qualitative test due to the emphasis on countering main force units using sustained offensive operations.

The 1968 combined campaign plan mirrors the 1967 one in that it includes the entire coastal plain and Mekong Delta regions but also includes, for the first time, part of the central highlands as a priority region for offensive operations. It also drops the national priority areas for pacification, thus focusing the entire effort on offensive military operations. (MACV, 1968: Encl. 1) Like its predecessor, it assigns South Vietnamese units in the CTZ's the mission of providing territorial security to pacification areas (enclosed on a separate map), defending major towns and cities, opening major highways, controlling vital resources, and disrupting Viet Cong tax collection efforts. (MACV,

1968: pp. 14-15) United States forces in each CTZ had the mission of destroying main forces in the priority regions on the map, destroying main forces located outside those areas, opening major highways, maintaining active surveillance of infiltration routes, and actively patrolling to locate main force units. Like the 1967 campaign plan the 1968 one continues the offensive, large unit focus and expands its operations into the central highlands.

The 1969 plan presents a map that combines pacification zones and areas of offensive operations on the same diagram. Pacification continues to focus on areas surrounding large cities and logistics bases, while offensive operations are designated for the entire central highlands as well as the regions between pacification zones. (MACV, 1969: Incl. 1) The priority of effort remains the same as in the 1968 plan, but now popular forces assume the tasks in each CTZ formerly designated for the entire South Vietnamese armed forces, and the Army of the Republic of Vietnam joins the military forces of the United States in the offensive effort. (MACV, 1969: pp. 14-18) MACV was right to put both campaigns on the same map but relegating the pacification effort to popular forces and expanding the offensive operations represents both a quantitative and qualitative misallocation of forces.

The 1970 and 1971 combined campaign plans drop the "priority areas" concept, which had some merit, and focused even more on enemy main force units. The maps in these plans depict Viet Cong and North Vietnamese base areas that subordinate units are to eliminate. They are mostly in the central highlands, although a few are located in the populated regions. (MACV, 1970: p. L-1-1; 1971: p. K-1-1) It was against these areas,

incidentally, that the campaign plan exhorted commanders to use B-52's. The tasks assigned to each CTZ are qualitatively superior to those in earlier plans from the standpoint of participation in a popular war. Corps commanders, both American and South Vietnamese, are to gain and maintain security in their regions, attack main forces in their area of operations, interdict infiltration routes, conduct active reconnaissance of their regions to detect main force units, and defend major cities and towns within the CTZ's. (MACV, 1970: pp. 16-21; 1971: pp. 15-21) MACV properly assigned security to the top position in the task list and gave United States and South Vietnamese commanders the same priorities. Like the counter VCI effort, however, this emphasis was too late and was contradicted by other guidance in the plans, such as the continued reliance upon territorial forces for pacification while regular units conducted large scale offensive operations.

The Republic of Vietnam's Pacification and Development Plan placed its emphasis on local security in hamlets before destruction of main force units operating elsewhere. The 1970 plan lists the tasks that must be accomplished to obtain security for the population as maintenance of security secure areas, gaining security in Viet Cong controlled areas, neutralizing the VCI, forcing Viet Cong and North Vietnamese main forces to leave South Vietnam, and establishing a system not dependent upon the United States. (RVN, 1970: p. I-1-2) MACV's campaign plans never matched the pacification plan, seeking instead to oust communist main forces rather than establish permanent local security for the population. The prioritization of tasks given to the CTZ's and the continued emphasis on offensive operation despite their negative effect on the populations is evidence of this.

Combat after - action reports reflect MACV's focus on the large unit war in the central highlands to a significant degree. The United States 1st Cavalry Division's report on the Pleiku Campaign in 1965 is illustrative of this because it received widespread attention and was the first use of a divisional size unit in the war. It concludes with the statement:

During the period 23 October to 25 November 1965, elements of the 1st Cavalry Division (Airmobile) supported by USAF and other US Army Units and in cooperation with ARVN forces, conducted a highly successful campaign against major enemy forces in PLEIKU Province. This campaign destroyed major elements of three NVA regiments and had the strategic importance of interrupting the planned future operation of the NVA in the central highland region of Vietnam. (1st CAV, 1965: p. 132)

This illustrates MACV's failure to emphasize pacification because the area the division was operating in was not in one of the priority areas noted in the campaign plan. Further, its employment in mass and its very mobility via helicopter worked against the principles of counterinsurgency, which relies on permanent presence of dispersed forces at the hamlet level.

MACV's operational plans, then, did not employ the forces at its disposal in a manner consistent with the dictates of a popular war in either a quantitative or qualitative way. General Abrams' LRPTG notes the paradox of successful military operations being counterproductive to the ultimate political goals of the war and notes that the military effort uses 90% of MACV's resource expenditures. (LRPTG, 1969: p. 18) Eric Bergerud describes MACV's operational methods:

The combat battalions supported by this massive structure were very flexible, exceptionally mobile, and extremely powerful. Despite six years of war and scores of major engagements, American ground forces did not lose a single battle in Vietnam. Yet, the factors that made American

units so formidable in battle also dictated that they be relatively few in number. Consequently, U.S. commanders in Vietnam were reluctant to disperse what combat strength they did possess in an attempt to control the largest possible area with the fewest possible men. Rather, commanders sought important objectives, usually enemy main force units or safe zones, that would allow them to concentrate the forces available and use the maximum amount of firepower. This tendency was particularly marked before 1969, when the enemy was employing large main force units in almost every part of Vietnam. Within this context, the large-unit war conducted by the United States during the first three years of possessed a compelling internal logic. The logic of the situation, however, thwarted the desires of many Americans concerned with the village war, who wanted to have U.S. forces widely dispersed and employed directly in support of the various pacification plans. (Bergerud, 1991: p. 88)

The internal logic of MACV's focus on the large unit war did not, however, solve the external problem facing it: an insurgency focused at the hamlet level. General Bruce Palmer assesses the communist's strategy in using the central highlands as an attempt at "... weakening South Vietnam's pacification program by drawing forces away from populated areas, exposing other important areas to attack, inflicting casualties on allied forces, and expending their time and resources in unnecessary and unprofitable moves." (Palmer, 1984: p. 182) In this the communists were successful, in part because MACV played into their hands by focusing the war on conventional operations rather than on pacification.

VI. DETERMINISTIC DISORDER

A. CHAOS, CLAUSEWITZ, AND WAR AS A DETERMINISTIC SYSTEM

The third aspect of chaotic systems in Kellert's definition are their deterministic nature. This term has at least four definitions identified by Kellert: total predictability, value determinateness, unique evolution, and differential dynamics. (Kellert, 1993: p.50) Respectively, these definitions decrease in the restrictiveness of their requirements. Total predictability means that if the initial conditions of a system can be determined to a high degree of accuracy, then the end state can be predicted. An example of total predictability is the calculation of the effect of the moon and earth's gravity on the Apollo 13 spacecraft used to "slingshot" it around the moon to reenter earth's gravitational pull. Value determinateness means that the system is composed of a finite number of properties with real values. In addition to space travel, this includes the example of convection, in which the variables operating in the system: air, heat, gravity, and volume, are finite and measurable in real terms. Unique evolution means that the evolution of a system is fixed once we specify the state of the system at any given time. In other words, the outcome of a system is determined by the values and interrelationships of its variables at a given time. This precludes the intervention of random or chance occurrences which may upset those specified quantities. The last definition, differential dynamics, means that the system may be described by differential equations, i.e., it is not random. Meteorology is an example of this because one can describe the activity of weather systems by using equations at a given time but the effects of chance and chaos make any long term prediction of its final state impossible. Although the scientific community continues to debate which, if any, of these

definitions apply to chaotic systems, this thesis will use a philosophical interpretation of Kellert's concept, which concurs with the last version, differential dynamics. He writes:

"Given the current state of the universe, the future will be fixed, but fixed only within a huge spectrum of distinguishable possibilities. . . Chaos and quantum theory lead us to just such a vision of the universe as a congeries of interrelated but open possibilities, foaming forth in its infinitude."
(Kellert, 1993: p. 73)

This idea of determinism means that chaotic phenomena such as war are not completely random, they are dynamical systems, yet the number of possible outcomes covers a very wide spectrum of possibilities within some established bounds. Returning to the example of the weather, we know that seasons recur with regularity yet long term prediction of weather systems or the relative severity of those seasons remains impossible. It is this "orderly disorder" which is a hallmark of chaotic systems in general and war in particular.

In spite of its nonlinearity, Clausewitz's war remains deterministic. In On War, this deterministic nature comes from Clausewitz's most often quoted statement, "We see, therefore, that war is not merely an act of policy but a true political instrument, a continuation of political intercourse, carried on with other means." (Clausewitz, 1989: p. 87) He also identifies the spectrum of possible outcomes which, though broad, is nonetheless finite. He writes:

Generally speaking, a military objective that matches the political object in scale will, if the latter is reduced, be reduced in proportion; this will be all the more so as the political object increases its predominance. Thus it follows that without any inconsistency wars can have all degree of importance and intensity, ranging from a war of extermination down to simple armed observation. (Clausewitz, 1989: p. 81)

Historian Hans Rothfels comments on Clausewitz's recognition of war's attachment to its context in the first edition of Makers of Modern Strategy, "It is in the light of this flexible

interpretation that Clausewitz surveys the whole of military history. No single event can be separated from its socio - political preconditions and from the whole atmosphere of tension." (Rothfels, 1971: p. 107) For Clausewitz, then, war remains nonlinear and unpredictable yet bounded by politics, which makes it dynamical and deterministic. This "orderly disorder" is unique to chaos theory, making Clausewitz's theory bear an even closer resemblance to it.

The deterministic nature of war arises from the previously discussed interaction between policy and means, and it highlights the distinction between popular and conventional war. In the latter the relatively low level of feedback in the ends - means relationship makes policy less confining to the operational commander. Thus the theater commander in the Gulf War, General Norman Schwarzkopf, had considerable latitude in the application of violence against Iraq's armed forces and state apparatus.

Popular wars, however, exhibit considerable feedback from the application of force to the political sphere, which makes policy more confining to the operational commander. The inherently political nature of the war, the "zero - sum" nature of the insurgent's goals, and the direct participation of elements of society make this so. Leites and Wolf contrast the application of violence by insurgents with that of the regime, or authority:

In general, there is a sharp contrast between R[ebellion] and A[uthority] with respect to the style and effectiveness with which they use the threat and imposition of damage. The pattern employed by R is strikingly more effective. . . In the case of A, damage - infliction on the population usually emerges as fallout from other activities rather than as conscious design. As a result, the quantum of damage inflicted by A is often inflated and capricious rather than limited and discriminating. (Leites and Wolf, 1970: p. 155)

The limited force applied by insurgents, whether by design or by lack of capability or both,

contrasts sharply with the regime's use of massive force. Further, the regime often inadvertently attacks the population in its conventional attempts to kill the insurgents, who are intermingled with the population. In Vietnam, therefore, MACV faced a situation wherein military activity immediately affected policy by harming the population and was, in turn, limited by it.

The different level of determinism exhibited by conventional and popular wars means that the operational commander in the latter must be more sensitive to the political effects of the means employed than his conventional counterpart. Violence in popular wars must be meted out in a discriminate manner and the forces being employed must remain in touch with the surrounding population in a meaningful way. In conventional wars, on the other hand, violence may be used in a more concentrated way and at a higher level because the opposition's military is not directly tied to the population.

B. THE DETERMINISTIC NATURE OF THE VIETNAM WAR, 1966 -1971

The Vietnam War exhibited the restrictive influence of policy on means characteristic of popular wars. The political nature of the Vietnam War, with its focus on the population, and the zero - sum goals of all of the participants except the United States made policy particularly confining to MACV. The more involved the United States became, the more feedback from the application of force crippled its ability to win politically. John Shy writes:

Whether an Americanized war could have been won, short of destroying the country and its population, continues to be a debated question. But surely massive American military intervention exacerbated the basic political, social, and economic conditions that gave revolutionary war, in Vietnam and elsewhere, its impetus. And Americanizing the war made it almost impossible for the vital political effort, necessarily a civilian effort,

to deal with whatever made so many Vietnamese ready to wage or support a revolutionary war. (Paret, 1986: p. 856)

Thus the United States' effort to kill its way to victory by destroying communist main force units was doomed to failure because it produced feedback effects into the political realm that, in return, made those efforts inimicable to finding a political solution.

The task facing MACV was to produce campaign plans that attenuated the amount of feedback into the political sphere in South Vietnam and in the United States. To do this, operational planning had to be politically sensitive and consider the political implications of every use of force. Operations that had the potential for widespread destruction, such as air campaigns and large, mechanized operations, had to be carefully analyzed to ensure that the military benefits outweighed the political costs due to feedback. Policies that permitted or encouraged killing for its own sake, such as body counts and directives to "kill VC," had to be very restrictive lest abuses of those policies further estrange the population. Further, the use of American troops had to be carefully considered because of the limited aims being pursued by the United States and the increasing unpopularity of the war.

MACV's operational plans failed to limit the feedback of the military means employed on the political ends due to its focus on the large unit war, discussed in Chapter IV, Section C. The combined campaign plans also failed to address the deterministic nature of the Vietnam War by engaging United States forces in operations guaranteed to produce casualties and wreak havoc on the population. The 1966 plan states, "US and FWMA forces will be responsible for security of their major bases, clearing in the vicinity of those bases, and, as directed, assist in the control and protection of rice and salt

producing area." (MACV, 1966: p. 153) MACV's focus for American forces at the beginning was on the logistics bases that supplied both United States and South Vietnamese and on critical national resources: not a bad start from the viewpoint of the deterministic nature of a popular war.

By 1967, however, the focus for United States forces was clearly on the "war of the battalions." The combined campaign plan for that year states:

The primary mission of U.S. and FWMAF will be to destroy the VC/NVA main forces, base areas, and resources and/or drive the enemy into the sparsely populated and food - scarce areas; secure their base areas and clear in the vicinity of these bases; and as directed assist in the protection and control of national resources. (MACV, 1967: p. 4)

The introduction of operations against main force units with a concomitant rise in American casualties in this year as the top priority for United States forces coincided with the first large scale protests against the war at home.

The combined campaign plans for 1968 and 1969 are identical in terms of the missions assigned to United States forces in Vietnam:

US/FWMAF will have the primary responsibility for:

- (a) Destroying the VC/NVA main forces, base areas, and resources;
- (b) Containment operations along the DMZ and adjacent border sanctuary areas to deny the enemy use of infiltration and invasion routes;
- (c) Assisting and reinforcing RVNAF as necessary in opening and securing LOC's, providing security for selected priority areas and protecting national resources. (MACV, 1968: p. 8; 1969: p. 8)

In this case the focus continues to be on operations against main force units, with the added mission of countering North Vietnamese thrusts across the Demilitarized Zone or from neighboring Cambodia and Laos.

The combined campaign plans for 1970 and 1971 give identical mission to the regular forces of both the United States and the Republic of Vietnam:

First, the regular forces of FWMAF and RVNAF, to include the Civilian Irregular Defense Group (CIDG), will conduct operations primarily to:

1. Locate and neutralize enemy main forces, base areas, and logistics systems in RVN.
2. Deter enemy incursions into RVN along the DMZ, the Laotian and Cambodian borders, and in coastal waters.
3. Prevent enemy incursions into consolidation zones and secure areas.

(MACV, 1970: p. 7; 1971: p. 5)

MACV's focus for American forces thus remained on the large unit war until the very end of direct involvement by the United States. Operational planning tasked American units to do the very missions that they could least afford to do as the forces representing an external power with limited aims.

Using United States ground forces in a concentrated way to combat communist main force units also gave the Viet Cong a propaganda victory due to the widespread destruction that accompanied those operations. The Republic of Vietnam's Pacification and Development plan comments:

In his efforts to achieve political control of RVN, the enemy attempts to demonstrate that the GVN is not capable of governing the country or of providing credible security to the people. His offensive operations and the resultant operations by friendly forces produce adverse effects on security of the people (RVN, 1970: p. I-1-1)

The combined campaign plans for 1970 and 1971 also take note of the effect of "friendly" operations in populated areas and graphically depict the perceptions of threat facing the population at large. These tables, included at Appendix B, show that the average villager equally feared the Viet Cong and the United States forces - especially artillery and air.

(MACV, 1970: p. B-1-A-1; 1971: p. B-1-A-1) In spite of the knowledge of the impact

of United States' operations on the population, MACV persisted in focusing on the large unit war.

Combat after - action reports also note the effects of friendly operations on the population. A trooper of the American 1st Cavalry Division summed up Operation Jeb Stuart this way, "We were supposed to search and destroy everything we could find. We destroyed a hell of a lot out there. That was the mission we were sent out to do, and we did it." (1st CAV, 1968: p. 21) A more specific comment in the 173rd Airborne Brigade's report on Operation Dan Sinh states, "An undetermined number of civilians moved from the area of operations to avoid being involved with the military operations. It is estimated that this number is approximately 2500." (173rd, 1969: p. 15) The impact of large unit operations on the population did little to endear the United States to the citizens of South Vietnam and increased the amount of feedback felt by political leadership at home.

MACV's operational planning had the unintended effects of alienating the populations of both South Vietnam and the United States. It did so in the latter by engaging American units in large scale combat with enemy main force units. The large battles with significant casualties on both sides, coupled with the images of burning hamlets and civilian casualties made the war increasingly unpopular with a vocal minority in the United States. General Abrams' LRPTG notes:

Lack of time is the greatest threat to achievement of the present US objectives in Vietnam. This constraint results primarily from an inability to coalesce the US national will to pursue our ultimate objectives. Millions of US citizens have been persuaded that the US has no legitimate purpose in Vietnam, and/or that the matter is hopeless. The desire for "peace" is

almost as great among some influential and vocal segments of American society as it is among most Vietnamese peasants. (LRPTG, 1969: p. 4)

Thus MACV's use of United States forces in large unit operations fulfilled the requirement to "kill VC" but had the simultaneous effect of "killing popular will."

In the case of South Vietnamese citizens, the employment of American forces was likewise damaging. Robert McNamara comments:

Shells and napalm rained down on Vietcong and North Vietnamese base areas in South Vietnam. It often proved difficult to distinguish combatants from noncombatants. Between 1965 and 1967, U.S. and South Vietnamese air forces dropped over a million tons of bombs on the South, more than twice the tonnage dropped on the North. Fighting produced more and more civilian casualties and squalid refugee camps. The increasing destruction and misery brought on the country we were supposed to be helping troubled me greatly. This also undermined, in an unintended but profound way, the pacification program designed to extend security to the countryside and win the "hearts and minds" of the South Vietnamese people. And it hurt any effort at building popular support for the Saigon government, which was crucial to defeating the Vietcong. (McNamara, 1995: p. 243)

MACV's failure to address the deterministic nature of the war in Vietnam led it to focus on the conventional aspects of that war, which produced significant negative feedback into the political situations of both the United States and the Republic of Vietnam.

Discontinuities will, however, occur in war, and Clausewitz appreciates this in his treatment of the subject, remarking, "Between two peoples and two states there can be such tensions, such a mass of inflammable material, that the slightest quarrel can produce a wholly disproportionate effect - a real explosion." (Clausewitz, 1989: p. 81) One example of such a change in warfare is the transition from the wars of Frederick the Great to those of Napoleon, in which technology remained virtually unchanged while war

underwent a fundamental shift.⁶ Chaotic systems, too, exhibit discontinuities, such as the change in weather patterns from the ice age to the present one. Computer models of the atmosphere often result lapse into a glaciated state without any external input. Gleick describes this characteristic as almost intransitivity, and remarks that it ". . . displays one sort of average behavior for a very long time, fluctuating within certain bounds. Then, for no reason whatsoever, it shifts into a different sort of behavior, still fluctuating but producing a different average." (Gleick, 1987: p. 170) Such occurrences in nature, as in war, are rare yet do occur and are a special feature of chaotic systems.

⁶For further information on this subject see: Delbruck, Hans. The Dawn of Modern Warfare. Trans. Walter J. Renfroe. Lincoln, NE: The University of Nebraska Press, 1985.

VII. THE IRRELEVANCE OF ETERNAL RETURN

A. CHAOS, CLAUSEWITZ, AND WAR'S APERIODICITY

The fourth component of Kellert's definition of a chaotic system is its aperiodicity. This concept simply means that a dynamical system will never repeat itself in exactly the same way. An example of this is the aforementioned computer model of the earth's atmosphere which produces a very different outcome for each iteration even if the initial conditions are varied only slightly. (Gleick, 1987: p. 15) Ruelle points out the implications of this idea for complex dynamical systems such as war, "The historical evolution of very complex systems, by contrast, is typically one way: history does not repeat itself. For these very complex systems with one - way time evolutions it is usually clear that sensitive dependence on initial conditions is present." (Ruelle, 1991: p. 82) Chaotic systems, then, do not repeat due to their sensitive dependence on initial conditions, a concept discussed in the next chapter. For war, this means that no two will be alike and that what is successful in one may not be in another.

War, too, is aperiodic because it never repeats in exactly the same way; history does not repeat itself. For Clausewitz this is true because war is inextricably linked to the conditions which bring it about. He writes:

First, therefore, it is clear that war should never be thought of as *something autonomous* but always as an *instrument of policy*; otherwise the entire history of war would contradict us. Only this approach will enable us to penetrate the problem intelligently. *Second*, this way of looking at it will show us how wars must vary with the nature of their motives and of the situations which give rise to them. (Clausewitz, 1989: p. 88)

Nichols and Tagarev also recognize this trait, writing, "Chaotic systems are neither

random not periodic. They are not random because the future of a chaotic system is dependent upon initial conditions. They are not periodic because their behavior never repeats." (Nichols and Tagarev, 1994: p. 49) Like the nonlinear yet deterministic paradox, the aperiodic yet dynamical trait of war is one that is also unique to chaotic systems. Thus Clausewitz's theory of war closely parallels the characteristics of chaos theory.

The aperiodicity of war also manifests itself in the different forms it can tend toward: conventional and popular war. The very existence of two distinct types of war that arise from the context surrounding its outbreak is, in itself, an example of aperiodicity. That war confines itself to a finite range of possibilities from totally conventional to totally popular means that it remains deterministic, yet the infinite number of ways this may manifest itself - the degree to which it is conventional or popular - shows how it can never repeat. In a word, warfare is chaotic. Thus the Gulf War was not a repeat of Vietnam as some warned, nor was Vietnam a repeat of Korea as some thought.

Again, this has ramifications for an external power seeking to intervene in one or the other type of war. Accurate assessment of the type of conflict that the intervener is getting involved in must determine what type of force is employed and in what manner, rather than sending what was effective in the last conflict. George E. Thibault warns:

The other pitfall is the *it's-worked-before* school. The military especially is, by past experience, as conservative as one might expect a profession to be which shoulders the survival of the state. Military solutions that have worked in the past are usually the instinctive solution for today's problems. This is a natural response and it might be the response some of the time. But even situations that look alike may be profoundly different. World War III on Europe's Central Front probably will not play out like World War II. Yet, the war plans and the equipment

we have been building for the past 40 years have not changed very much, and we have found to our distress that often they are unsuitable for the problems we have been experiencing in the Third World since 1945. But, armies head to head, navies seeking the decisive sea battle, and air forces planning the big air to air campaign are what we are most comfortable with, whatever their faults. (Thibault, 1987: p. 3)

Conventional wars demand the conventional response of policy backed by force; popular wars demand an integrated politico-military response. The success of a conventional force in that type of war does not mean that the same force will be successful in a popular war. Again, Vietnam provides an excellent example of this: what worked in Korea, a conventional war, failed in Vietnam, a popular war.

B. APERIODICITY AND THE VIETNAM WAR, 1966 - 1971

The Vietnam War shares many superficial characteristics with the Korean War but demonstrates the validity of war's aperiodicity because it was fundamentally different. Whereas the latter was primarily a conventional war with some popular components, the former was primarily a popular war with some conventional aspects. Larry Cable writes:

The Vietnam War was a limited war in support of policy. In this it resembled the Korean conflict. However, the Vietnam War differed in character from its immediate predecessor. It combined aspects of conventional and guerrilla war. It mixed insurgency with partisan conflict. It had a chameleon appearance as its character changed several times between 1964 and 1968. As a result, the formulation of a goal, the definition of victory and the development of a theory of victory placed greater demands upon the policy makers and military commanders of the Johnson Administration. (Cable, 1991: p. vii)

In this the Vietnam War more closely resembled the United States' involvement in countering the Huk rebellion in the Philippines or the communist movement in the Greek Civil War. Even these examples, though popular wars, do not provide an exact roadmap to success in Vietnam due to the effectiveness of the host government in the former case

that was lacking in Vietnam and the ineffectiveness of the opposition in the latter case that was absent in the case of the Viet Cong and North Vietnamese.

The uniqueness of the Vietnam War in the American experience demanded a unique response from MACV. Rather than refighting the Korean War, with its emphasis on countering the threat of a cross border invasion by conventional forces, Vietnam required a true counterinsurgency effort backed by conventional force as a deterrent to a North Vietnamese conventional invasion. Operational plans had to reflect an appreciation of the constraints facing MACV: weakening domestic support for the war, a weak host government, and a disaffected population with significant sympathy for the enemy. The answer was not a replay of the successes of the Korean War or World War II but a response tailored to the internal war in Vietnam.

MACV increasingly feared a cross border invasion of the Republic of Vietnam by the North Vietnamese as the United States' involvement deepened. This increased fear and attention on that scenario manifest itself in operational plans in two ways: assessment of the threat and the employment of Civilian Irregular Defense Groups (CIDG), which were originally intended as the Special Forces' contribution to the pacification effort. CIDG's, under the tutelage of the Special Forces, were designed to provide indigenous security to populated regions. The program, originally administered by the Central Intelligence Agency, came under MACV's control in 1964. In the 1966 combined campaign plan, no mention is made of the CIDG, but in the plans from 1967 - 1970, the CIDG's primary mission is one of border surveillance along the Demilitarized Zone and the Cambodian and Laotian borders. (MACV, 1967: p. 15; 1968: p. 9; 1969: p. 9; 1970: p.

11) This use of a resource designed for pacification to screen the borders is one example of MACV's unwillingness to deviate from the Korean War paradigm.

Another example of MACV's belief that the situation in Vietnam was analogous to the one in Korea over a decade earlier is its assessment of the threat in the combined campaign plans. The 1966 plan offers a hopeful start, assuming that there will be no cross border attack from the Democratic Republic of Vietnam. (MACV, 1966: p. 152) The 1967 combined campaign plan drops this assumption and expresses concern over, "... the fact that the northern flank of the Allied position in SVN, until recently politically shielded by the internationally recognized DMZ, has been exposed." (MACV, 1967: p. 97) It also lists as the first probable course of action for the communists a multi - division attack to seize the northernmost provinces of the Republic of Vietnam. (MACV, 1967: p. 103) After the Tet Offensive, fears of a cross border invasion subsided somewhat, and the plans reflect this, although the possibility is never rejected as it was in 1966. The 1970 campaign plan predicts that the communists will continue to wage a protracted war to exhaust the United States' will and continue "proselyting" and guerrilla warfare in the populated regions of South Vietnam. (MACV, 1970: p. A-21) MACV's focus on the cross border threat - the Korea analogy - thus resembles a normal distribution curve: little fear of an overt invasion in 1966 followed by heightened fears in 1967- 1968 which dwindle by 1971.

The Republic of Vietnam's Pacification and Development Plan reflects the optimism of MACV's planning in the latter phases of its conduct of the war. It states, "The year of 1968 was one of military contests; 1969, the year we expanded security, and

in 1970 all the existing resources will be used for political and economic development in order to push forward our victory and expand the area under our control." (RVN, 1970: p. 12) Although MACV acknowledged in its analysis of the threats facing the South Vietnam that the cross border invasion was unlikely, it continued to deploy its troops in the central highlands to destroy main forces rather than turning to pacification and using strategic reserves as a contingency to the diminished conventional threat.

Combat after - action reports further demonstrate MACV's paranoia concerning a cross border invasion. One example of this is the removal of a CIDG camp to a location closer to the Cambodian border to conduct surveillance operations in 1967. The 5th Special Forces Group report states, "Prek Klok CIDG camp was closed in order to locate a new camp at Katum XT332898. COMUSMACV directed that a CIDG camp be placed at Katum due to its location astride the major infiltration route running along Highway 246 from Cambodia." (5th SF, 1967: p. 6) Keeping in mind the original function of the Special Forces and CIDG, this mission was inappropriate and detracted from the pacification effort.

General Abrams' LRPTG recognized that the military defeat of the main forces in the central highlands and the subsequent removal of the cross border threat did not represent final victory for the United States. It states:

We do now have many of the conditions of a military victory, because of a voluntary partial withdrawal of some NVA units from South Vietnam and into base areas, and the damage that has been inflicted on them and on VC units. But a military victory is not synonymous with the achievement of the ultimate US objectives, does not end the US effort in Vietnam, nor signal the completion of COMUS's mission. (LRPTG, 1969: p. 10)

Although MACV's combined campaign plans after 1969 reflect the lessened threat posed by a cross border invasion, they still emphasize the role of main force units and base areas and deploy troops, both conventional and unconventional in such a way as to counter this threat rather than the one posed by the VCI.

MACV's operational planning in Vietnam failed in many respects in its appraisal of the Vietnam War's nature and the nature of the enemy it faced. General David R. Palmer writes:

Recent American experiences had been in Korea and World War II, where force opposed force, where maps portrayed a neatly defined battlefield, where ground taken or lost meant something. Thus, despite numerous and unmistakable signs that times and warfare had changed, professional military advisors persisted in viewing any potential invasion of South Vietnam strictly within the blinders of their own background. So, to shield the South from open assault from across the 17th Parallel, American advisors and American dollars fashioned an army patterned after those forces which had decisively defeated Germany and Japan, and had later stopped the Red Chinese in the rugged hills of Korea. (Palmer, 1978: p. 16)

Manifestations of this "Korea analogy" occurred in MACV's planning, particularly in 1967-1968. Particularly damning is MACV's use of Special Forces, experts in counterinsurgency and pacification, as reconnaissance and surveillance assets on the sparsely populated border regions of the Republic of Vietnam. Andrew Krepinevich comments:

Thus, while working for the CIA, the Army's Special Forces effectively emphasized pacification and population security operations. However, once CIA control over the CIDG program was terminated, MACV quickly reoriented the Special Forces away from their "deviant" behavior into missions viewed by the military hierarchy as more appropriate and more reflective of the Army Concept. The result was the collapse of the pacification program in those areas where Special Forces had been operating and the establishment of an ineffectual border surveillance

program far from the populated areas, against an enemy who, for the most part, was operating and receiving sustenance from *within* South Vietnam. (Krepinevich, 1986: p. 75)

MACV's ability to perceive the uniqueness of the Vietnam War and avoid viewing it through the paradigm of the Korean War was, at best mixed. Operational planning in Vietnam reflected an appreciation of the aperiodicity of war in its assessment of the enemy's capabilities and intentions but failed to act on that knowledge in a meaningful way.

War's aperiodicity does not mean that it is totally random, however. It maintains a deterministic nature that means some wars may resemble each other much as the seasons resemble each other from year to year. Again, Clausewitz notes the similarities which may manifest themselves in warfare by noting the generally linear relationship, excepting discontinuities, between the political motives of the war and the means employed to achieve them. He writes:

The more powerful and inspiring the motives for war, the more they affect the belligerent nations and the fiercer the tensions that precede the outbreak, the closer war will approach its abstract concept, the more important will be the destruction of the enemy, the more closely will the military aims and the political objects of war coincide, and the more military and less political will war appear to be. On the other hand, the less intense the motives, the less will the military element's natural tendency to violence coincide with political directives. (Clausewitz, 1989: p. 87)

Like any chaotic system, war generates both patterns and randomness: it is simultaneously orderly and unpredictable.

VIII. INTERNAL INSTABILITY

A. CHAOS, CLAUSEWITZ, AND THE INSTABILITY OF WAR

The fifth part of Kellert's definition of a chaotic system is its instability. This term has a more specific name in chaos theory: sensitive dependence on initial conditions.

Ruelle states that this characteristic "... means that a small change in the state of the system at time zero produces a later change that grows exponentially with time." (Ruelle, 1991: p. 40) Basically, a chaotic system is unpredictable because seemingly insignificant changes or events have profound effects later on. Due to our inability to measure the initial conditions of a system with infinite accuracy, we cannot predict how these small changes will affect the system. The classic example of this phenomenon, known as the butterfly effect, posits that a butterfly fluttering its wings in the Amazon basin can, due to the effects of sensitive dependence on initial conditions, cause a hurricane in China as the tiny puff of air from its wings causes a long chain reaction. (Gleick, 1987: p. 20) The deterministic nature of chaotic systems, however, keeps them from becoming totally incomprehensible: there remains a finite, albeit large, set of possible end states for the system. The butterfly's effect could just as easily been imperceptible but, in any case, would remain confined to a finite range of known weather patterns limited by season and geography. Philosophically, this means that human phenomena such as war are unpredictable but have a calculable universe of outcomes.

On War also emphasizes the unpredictability of war caused by sensitive dependence on initial conditions. Clausewitz writes in the first chapter of Book One, "The art of war deals with living and with moral forces. Consequently, it cannot attain the

absolute, or certainty; it must always leave a margin for uncertainty, in the greatest things as much as in the smallest." (Clausewitz, 1989: p. 86) Although this passage alludes only to the uncertainty of dealing with psychological forces, Clausewitz also addresses the instability created by war's overall chaotic nature. In the sixth chapter of Book Two he writes:

Undoubtedly, the knowledge basic to the art of war is empirical. While, for the most part, it is derived from the nature of things, this very nature is usually revealed to us only by experience. Its application, moreover, is modified by so many conditions that its effects can never be completely established merely from the nature of the means. (Clausewitz, 1989: p. 170)

Despite the empirical basis of its constituent parts - its dynamic and deterministic aspects - it remains unpredictable because those parts cannot be measured to a perfect degree of accuracy. Beyerchen writes:

The overall pattern is clear: war seen as a nonlinear phenomenon - as Clausewitz sees it - is inherently unpredictable by analytical means. Chance and complexity dominate simplicity in the real world. . . No theory can provide the analytical short-cuts necessary to allow us to skip ahead of the "running" of an actual war. (Beyerchen, 1993: p. 90)

Again, the link between chaos theory and On War becomes ever clearer with the addition of instability from sensitive dependence on initial conditions to Clausewitz's treatment of war.

Like Clausewitz's concept of friction, war's instability manifests itself in different ways in popular and conventional wars. In the latter it primarily affects the deployed forces and intervenes at the tactical and operational level. Once the state establishes a clear political goal, the operational commander may take steps to reduce the effect of this unpredictability on his own force and increase it for the enemy. These steps include

reliance on technological and material solutions, as well as centralized command and control. The Gulf War remains a classic example of this: the war followed a relatively predictable course because the United States employed a major preponderance of force.

Popular wars, however, exhibit instability in a different way because of the linkage between ends and means and the direct involvement of the population in the conflict. Unpredictability manifests itself in the political sphere and cannot be overcome by material solutions because the contest is primarily a psychological one. Attempts to do so are ineffective at best and inimicable at worst. The United States attempted to overcome the role of chance in war in Vietnam, but its material based solutions only exacerbated the political problems faced by itself and its protege, the Republic of South Vietnam.

The different manifestations of instability in war have different implications for an external intervening power. Returning for a moment to Garry Wills' categorization of friction into internal and external varieties, the role friction in conventional wars has different implications than that encountered in an internal war. He writes, "Internally, remember, friction chews at an army even in success. Externally, the *military* transformations (*Wechselwirkung*) cause a disconnect from the *political* uses of war." (Wills, 1994: p. 94) In conventional war, attempts to overcome unpredictability must focus on the center of gravity of each side: its military power. Thus force protection on the one hand and decimation of the opposing side's force is the key, and material solutions lend themselves to this form of conflict and its internal friction. In popular wars, in contrast, attempts to overcome instability must focus on a different center of gravity: the link between the people and the host government or insurgents. Thus population

protection that focuses on preserving the state - people link and attacks the insurgent - people link is paramount. Material solutions play a role but are more focused on pacification than on firepower, and the primary realm of protection is in the political and psychological spheres and should focus more on countering external friction.

B. INSTABILITY IN THE VIETNAM WAR, 1966 - 1971

The butterfly effect manifested itself in Vietnam on the political will of the United States by magnifying and transferring the effects of chance and the United States' attempts to control it into the political realm. The tight linkage of ends and means characteristic of popular wars prevented the United States from effectively responding to chance in the way it was used to; via material solutions. Roger Beaumont writes:

Many American military and government officials, including those otherwise supportive of American involvement, criticized such techniques as the products of overdependence on "hardware" and symptomatic of a general lack of coherent policy. The tangled nexus of organizations, the bewildering arrays of equipment and ill - formed strategies and concepts were seen as complexity or chaos per se, or as the consequence of faulty organization and policies. Assessing the effect of any particular system or device of the many dozens employed was complicated by the dynamic of the Vietnam War, which saw very few major sustained battles or fixed lines of contact, but was mainly a fluidic and fragmented montage of flickering and formless patterns that thwarted the attempts of the Americans and South Vietnamese to plot trends and develop a coherent format. Immersed in that ambiguity, some military professionals hungered for the relative linearity of earlier conflicts and freedom from constraints on use of force. (Beaumont, 1994: p. 137)

The programs, policies, and devices mentioned in this passage were not applied randomly or in an attempt to wage a genocidal war against the Vietnamese, but represented the conventional response to chance which seeks the destruction of the enemy's armed force while protecting that of the United States.

The role of chance in a popular war such as the one in Vietnam in the 1966 - 1971 time frame demanded a response that focused more on population protection than force protection. MACV's plans should have restricted coercion to specific targets and relegated firepower to a secondary role behind pacification. Material solutions needed to focus more on winning the population's support and less on seeking and destroying communist main force units. Operational plans needed to distribute resources and offer specific guidelines to subordinate headquarters that responded to the effects of chance in the political realm rather than the tactical one.

MACV's combined campaign plans largely focused on the military effort to destroy communist main forces rather than on population protection, as the context of a popular war dictates. The theory of victory espoused in the campaign plans illustrates this. This theory of victory is not overtly stated in the 1966 or 1967 plans, but does occur under the rubric of goals in which are intended to measure progress during the course of the year in the plans from 1968 to 1971. In general, MACV's combined campaign plans at the beginning and end of its involvement give population protection equal weight with the military effort but allow the military effort to dominate in the years 1967 - 1969.

The 1966 combined campaign plan does not contain any specific goals or measures of effectiveness but does give security for the population some measure of importance. The campaign "... has as its basic objective to clear, secure and assist in development in the heavily populated areas around Saigon, in the Mekong Delta, and in selected portions of the coastal plain." (MACV, 1966: p. 153) Search and destroy missions are mentioned as coincidental operations that support the main effort. (Ibid.) In general, then,

population protection was more important than force protection in this section of the campaign plan.

The 1967 combined campaign plan contrasts sharply with its predecessor, although it, too, does not list specific measures of effectiveness. Its theory of victory is also in the objective of the campaign, which is now "To defeat VC/NVA forces," followed by "To extend GVN control in the Republic of Vietnam." (MACV, 1967: p. 2) Population security is no longer the main goal; destruction of the Viet Cong and North Vietnamese main forces has become an end in itself. Its position, superior to or at least coequal with the main focus of a popular war demonstrates the increasing focus on force protection because MACV's attention is increasingly drawn to the enemy that threatens its military forces rather than the population.

The 1968 combined campaign plan follows the general trend of the previous year, but explicitly lists its measures of effectiveness. The top five (out of twenty-five) are:

- (1) Render ineffective all enemy main and local force units.
 - (2) Inflict losses on the VC/NVA forces at a rate greater than the enemy can replace.
 - (3) Neutralize by end CY 1968 80% of the identified enemy base areas in RVN and capture or destroy his installations and caches.
 - (4) Increase the effectiveness of measures to deny the enemy use of coastal and inland waterways for the movement of men and materiel.
 - (5) Increase surveillance and operations along province boundaries.
- (MACV, 1969: p. 4)

The list continues in this vein until goal thirteen, which is the first specific mention of pacification and security for the population.

The 1969 campaign plan is an improvement over the 1968 one but still falls short of devoting adequate attention to population protection measures. Its top five goals are:

- (1) Organize, equip, modernize, and employ the RVNAF to achieve a maximum state of combat effectiveness.
- (2) Inflict more losses on the enemy than he can replace.
- (3) Increase the percent of the population and territory under GVN control through an expanded pacification effort.
- (4) Reduce the ability of the enemy to conduct ground attacks or attacks by fire against population centers, economic areas, and bases.
- (5) Deny the maximum number of base area sanctuaries in SVN to the enemy by their destruction or continuous neutralization. (MACV, 1969: p. 4)

Although population security makes the top five (out of ten) goals, it falls after the mission to make the South Vietnamese Army more combat effective, i.e., more proficient in large unit operations against main force units, and the attrition of enemy forces.

The 1970 and 1971 plans represent the best effort at population protection but continue to stress the large unit war. Their top five goals are identical and call for full implementation of the Republic of Vietnam's Pacification and Development Plan, increasing the combat effectiveness of the South Vietnamese Army, employment of that army in accordance with their assigned missions and capabilities, replacement of regular forces with territorial ones for pacification duties, and attrition of enemy forces. (MACV, 1970: pp. 4-6; 1971: pp. 4-5) These plans place the security effort at the top of the list, where it belongs in a popular war, but simultaneously undermine this effort by training and employing the South Vietnamese Army as a conventional force in the large unit war. MACV's plans started out focusing on the population rather than on its own conventional forces but, as the United States' involvement increased, so too did MACV's emphasis on the conventional aspect of the war in Vietnam. In the latter years of American involvement, during "Vietnamization" of the war, the pacification effort again rose in importance but never replaced the large unit war as the main focus.

MACV's operational plans, particularly in 1967 - 1969, contrasted sharply with the Republic of Vietnam's Pacification and Development Plans in terms of their approaches to security. The plan offers a description of security from the viewpoint of the peasant:

- (1) The Vietnamese villager fears military forces of both sides, since their operations constitute a threat to the safety of him and his family. He fears friendly artillery and air as much as he fears enemy mortars and rockets.
- (2) Military commanders frequently judge security as it relates to the safety of their units, rather than to the population in the area. For example, a battalion commander may feel that he is providing security to the people simply by being in the area. Frequently, however, the mere presence of a military unit within an area provokes an enemy attack. (RVN, 1970: p.I-1-2)

MACV's concept of security envisioned protection from communist main force units operating in South Vietnam and infiltrating from the border areas. This concept focused on the preservation of military power vested in large units rather than focusing on the activities of the VCI in the hamlets. Further, by using concentrated units supported by artillery and air strikes, the efforts to enhance force protection worsened the security level of the population.

Combat after - action reports corroborate the tendency of friendly forces to use indirect fire and air strike assets to protect military forces. A battalion sized operation conducted by the 173rd Airborne Brigade in 1966 had, at its disposal an entire battery of 105mm howitzers and a platoon of eight inch artillery, as well as tactical air and armed helicopters. (173rd, 1966: p. 1) Units did not always use these assets in a discriminate manner, understandably preferring to attack a hostile hamlet by fire rather than clearing it in person. A report of a squadron sized operation from the 11th Armored Cavalry Regiment in 1967 describes its use of indirect fire provided by the provisional battalion of

artillery, both 105mm and 155mm, supporting it: "Each evening when the line troops assumed their positions, artillery fired defensive concentrations in their areas. These fires were continued throughout the night as part of the H and I program." (11thACR, 1967: p. 3) The random nature of artillery employment, especially in harrassment and interdiction (H&I) fires, ensured that the population's security was threatened in a very real way. In fact, the harrassment and interdiction missions accounted for the vast majority of artillery usage in Vietnam, 3,977 out of a total of 6,261 in the mission described above. (Ibid.) Thus MACV's focus on concentrated use of force and emphasis on force protection via firepower undermined the security of the population.

General Abrams' LRPTG recognized the negative effects of feedback from the large unit war into the pacification effort. It concluded with several recommendations for MACV, among which was to, "Complete the remaining stage of the 'war of the battalions.' But continue your insistence on reduction of the boomerang effects (creation of refugees, avoidable casualties, unbalanced damage.)" (LRPTG, 1969: p. 31) MACV never put population security in the proper perspective for an effective response to the popular war in Vietnam. General Harold Moore comments, "The same awesome firepower - artillery, airstrikes, and ARA - that had saved our lives in the unpopulated Ia Drang Valley now, despite our best efforts, began taking a toll of innocent civilians killed and maimed, villages destroyed, and farm animals slain." (Moore, 1992: p. 403) MACV was on the horns of a dilemma: the attempts to prevent American casualties so important to the war effort in the United States caused it to rely heavily on concentrated firepower which, in turn, alienated the very population that MACV was charged with protecting.

The presence of sensitive dependence on initial conditions does not imply total anarchy, however. Chance events do not always dominate the system; their presence may be irrelevant. To illustrate this consider the well known verse that describes the role of chance in war:

For want of a nail, the shoe was lost;
For want of a shoe, the horse was lost;
For want of a horse, the rider was lost;
For want of a rider, the message was lost;
For want of the message, the battle was lost;
For want of a battle, the kingdom was lost;
All for the want of a nail!

Victory in the battle could have depended just as much on the message's never getting there if it contained erroneous or misleading information. The rider may have continued on despite the lost shoe and delivered the message. In any case, the system is not a hostage to chance yet the possibility for chance to play a great role exists. Thus Clausewitz counsels, "The good general must know friction in order to overcome it whenever possible, and in order not to expect a standard of achievement in his operations which this very friction makes impossible." (Clausewitz, 1989: p. 120) Therefore Clausewitzian friction, another name for chance, is an active part of war but is not the dominating influence over its conduct.

IX. QUALITY, NOT QUANTITY

A. CHAOS, CLAUSEWITZ, AND WAR AS A QUALITATIVE PHENOMENON

The last aspect of Kellert's definition of chaos is its qualitative nature. Due to the inability to determine the exact initial conditions of a chaotic system, chaos theory concerns itself with describing the system's characteristics rather than attempting to predict its outcome. It does this by means of fractional dimension, or fractals. An example of fractals is the shape or roughness of a coastline, which has an infinite length if one attempts to measure every twist and turn on it down to the smallest, microscopic scale. The degree of twist and turn in the coastline, however, is describable using fractional dimension, and remains constant at every scale. In other words, a magnified photo of one meter of coastline would qualitatively resemble an aerial photo of several kilometers of the same coastline; it is a fractal phenomenon. Gleick describes the role of fractals in chaos theory, "Fractional dimension becomes a way of measuring qualities that otherwise have no clear definition: the degree of roughness or irregularity in an object." (Gleick, 1987: p. 98) For war, this means that chaos theory provides a qualitative view of war as it is rather than a quantitative view of war as the analyst wants it to be.

Clausewitz also accounts for this phenomenon in On War through its qualitative rather than quantitative approach. Paret identifies this qualitative approach as phenomenological in nature. He writes:

Phenomenological abstraction, on the other hand, - *Wesensschau*, Husserl called it - seeks the essence of things, tries to establish the properties a thing must have to be that kind of a thing. It begins not with many phenomena but with the single phenomenon, and it need not investigate others, though it was the special strength of Clausewitz's approach that he

combined intensive analysis of the structure of war itself with broad historical comparisons. Basically, however, he took a single phenomenon, varied it in imagination to see what properties were essential to it and what properties could be removed in thought without effecting its essence. (Paret, 1985: p. 58)

Clausewitz's phenomenological approach becomes clear in the second chapter of Book

Two, which discusses the role of theory in the study of war. He writes:

Theory will have fulfilled its main task when it is used to analyze the constituent elements of war, to distinguish precisely what at first sight seems fused, to explain in full the properties of the means employed and to show their probable effects, to define clearly the nature of the ends in view, and to illuminate all phases of warfare in a thorough critical inquiry. (Clausewitz, 1989: p. 141)

This qualitative approach to war means that Clausewitz's theory applies to any level of war at any time. This universality, known in chaos theory as fractional dimension, means that a chaotic system, like war, exhibits chaotic behavior at all levels. Nichols and Tagarev tested warfare against historical data related to war and determined that, "... warfare is chaotic at the grand strategic, strategic, and operational level." (Nichols and Tagarev, 1994: p. 49) Clausewitz's entire approach to war, and the essence of his theory resembles chaos theory in principle due to its qualitative and fractal approach.

War's qualitative difference, its tendency to be of the conventional or popular type, is the at the heart of chaos theory and Clausewitz's phenomenological approach to the subject. A Harvard University National Security Program Discussion Paper entitled "Between Peace and War: Comprehending Low Intensity Conflict" highlights this typological difference:

Low intensity conflict is qualitatively different from war. It is commonly perceived, however, as the low end of a continuous conflict spectrum. This view leads to the notion that LIC is simply a mild form of

war. The Joint Low Intensity Conflict Project highlighted some differences: "The term 'low intensity' suggests a contrast to mid - or high - intensity conflict -- a spectrum of warfare. Low-intensity conflict, however, cannot be understood to mean simply the degree of violence involved. Low-intensity conflict has more to do with the nature of the violence -- the strategy that guides it and the way individuals engage each other in it -- than with level or numbers." The essence of LIC emerges in the above quote. (Crane, et al., 1988: p. 18)

Although I have rejected the term "low intensity conflict" in favor of popular war, the theme remains the same: the two forms of war, conventional and popular, are distinct types rather than ends of a spectrum. Conventional wars of any size exhibit the same characteristics in the interaction of their subsystems at every level from tactical to strategic. These characteristics have been discussed in the previous chapters and, when taken in aggregate, represent the distinction between it and popular war. In short, conventional war is manifest by autonomous military action concentrated in space and time pursuing variable political goals established by a centralized state apparatus. The Gulf War was all of these, and the United States successfully prosecuted the war because it recognized the nature of the conflict and acted accordingly.

Popular wars, in contrast, exhibit limited military action by forces integrated into society pursuing total political goals established by a decentralized political apparatus. The Vietnam War from 1965 - 1972 is an example of this type of war, and the United States' failure to recognize it as an internal war contributed substantially to its defeat. At its heart conventional war centers on military force; internal war on political and psychological persuasion.

The qualitative difference between popular and conventional war means that an external intervener must decide what kind of war it is facing then act accordingly. Using

the aforementioned specific characteristics of war is one vehicle for identifying whether the conflict is conventional or popular. Once this is determined the intervener must employ correspondingly different types of force: police-centered, host nation dominated force in the case of popular war, and military-centered force in the case of conventional war.

B. QUALITATIVE ANALYSIS OF THE VIETNAM WAR, 1966 - 1971

The Vietnam War was distinctly of the popular type until its transition to the final conventional stage in 1975. Qualitatively, the war consisted of an indigenous insurgency embodied in the Viet Cong that the Democratic Republic of Vietnam successfully "captured" after the decimation of the Tet Offensive. Even after the North Vietnamese takeover, the war retained its popular nature due to the Northerners' ability to use the existing organization, the VCI, to remain tied to the population. After the unsuccessful conventional attempts of 1968 and 1972, the conventional effort succeeded in 1975.

Larry Cable describes the characteristics of an insurgency that apply to Vietnam:

Insurgents are the armed expression of political discontent and disaffiliation arising organically from conditions within society as a result of the actions of the government under attack. Insurgents in the main rely upon their own exertions for supplies, intelligence, manpower and the other necessities of war. They set their own agenda and goals. Ultimately, they must look to themselves and the society they claim to represent for victory or defeat. While an insurgent organization might attempt to internationalize a conflict and might seek material or other assistance from an external source, it will not allow the vitiation of its agenda or goals. The external power is the auxiliary of the insurgent. Quite obviously, the two disparate forms of war require fundamentally different types of counter. (Cable, 1991: p. 6)

This generic description of a popular war applies to the Vietnam War with the addition of the Democratic Republic of Vietnam as an external power that supplanted the Viet Cong

after 1968. The addition of direct North Vietnamese participation and introduction of PAVN forces changed the conflict superficially, but their successful manipulation of the population via the VCI ensured that the conflict remained fundamentally of a popular type.

A popular war requires a response that first and foremost addresses the political, economic, and social needs of the population. Chief among these is security, but the host government or its mentor must achieve this security at the local level. Defending the population against an ethereal conventional threat while a real one lurks at the local level does not provide meaningful security for the population. MACV's plans in Vietnam, therefore, should have offered an integrated politico - military solution to the problems facing the peasantry in the Mekong Delta and coastal plains by establishing effective control of the population. Conventional war, though certainly part of any operational plan, should be treated as a contingency and complement to the overall counterinsurgency effort.

MACV never successfully combined the various aspects of counterinsurgency in its operational planning. The combined campaign plans for each year had some aspects that effectively addressed the popular component of the war, but each one had some other guidance that negated those passages. Further, the allocation of resources and attention invariably went to the conventional aspect of the war rather than the popular one, no matter what the campaign or pacification plans stated. The qualitative nature of MACV's operational planning simply did not match the context of the struggle in which it was engaged, and this contributed to the eventual defeat of the United States and Republic of Vietnam.

The 1966 plan focused its mission largely on the defense of logistics bases and large towns and cities. While there is nothing inherently wrong with these efforts, the main effort of a popular war, providing security to the bulk of the population, was neglected because South Vietnam was largely a rural, peasant society at the time. Further, it identified main force units as the major threat facing the Republic of Vietnam rather than the VCI and located the enemy center of gravity in North Vietnam rather than within the Viet Cong. Lastly, the 1966 plan failed to protect the population from collateral damage and encouraged the use of air and naval forces to destroy the enemy. The failure to recognize the war in Vietnam as a popular one contributed to this focus and led to the misallocation of resources into the conventional military struggle to the detriment of the pacification effort.

The 1967 combined campaign plan called for United States forces to destroy the communist main forces while South Vietnamese units took care of pacification. This focused more attention on the pacification effort and, indeed, the counter VCI effort was supposed to receive increased emphasis in this year. Concomitant with this apparent improvement, however, was increasing concern over the threat of main forces attacking across international boundaries and the establishment of base areas inside South Vietnam. Further, the guidance on application of force in populated areas was still vague and the 1967 order encouraged the use of B-52 strikes for the purpose of neutralizing Viet Cong base areas - inside the Republic of Vietnam. This continued to alienate the bulk of the population in the countryside and blurred the lines between "friendly" and "enemy." Using United States forces exclusively to combat main force units signalled a rise in American

casualties and eroded support for the war at home. Further, this use placed greater emphasis on the military aspects of the war than the pacification effort received: a reversal of the priorities called for in popular war.

The 1968 combined campaign plan continues the division of labor established the year before but no longer focuses on the VCI as the major threat. Rather, it views the cross border threat as paramount, and gives the central highlands a prominent place for operations. This was good because the area was sparsely populated but irrelevant for the same reason: the real war was in the hamlets where the VCI maintained control of much of the population. Again, there is little emphasis on rules of engagement or otherwise protecting the population from the effects of friendly operations. MACV's attention was, therefore, drawn from the coastal plains to the central highlands beginning in this year. The 1968 campaign plan, like the others, had some good points such as mentioning the VCI in several places and emphasizing the coastal plains and Mekong Delta regions, but in general it failed to give these areas either the quantitative or qualitative support they deserved.

The 1969 order closely resembles the 1968 one but comes up with a new division of labor: South Vietnamese regular troops join United States forces in combat against the communist main forces and the pacification effort goes to the territorial forces. The VCI continues to occupy some space in the plan but most discussion of the threat concerns the operations of main force units both inside and outside of the Republic of Vietnam. Rules of engagement or other guidance on the use of force continue to be largely ignored. The "Vietnamization" effort had the net effect of pulling even more resources out of the

pacification effort as South Vietnamese regular forces switched to the large unit war. Large operations contributed to the refugee problem and alienated the population due to indiscriminate firepower. MACV's operational planning thus continued its trend of treating the pacification effort as the "other" war and concentrating on what it felt was the decisive area. It proved to be incorrect.

The 1970 and 1971 combined campaign plans closely mirrored each other and placed the most emphasis to date on the pacification effort - going so far as to make it the primary mission. The counter VCI effort, too, was identified as a top priority and given emphasis throughout the orders. It also correctly assessed that the communists were in no position to launch a major cross border operation. Counteracting these positive developments were a continued silence on rules of engagement and the use of regular forces primarily as counters to communist main forces in the Republic of Vietnam. General Abrams' "one war" strategy briefed well but was never fully pursued by MACV, which focused on the large unit war and extraction of American units from Vietnam.

The Republic of Vietnam's Pacification and Development Plan rightly stated the appropriate mission of military forces in the Vietnam War:

RVNAF, assisted by FWMAF, and in conjunction with civil elements, provides security to the population throughout RVN, thus providing an environment in which other Pacification and Development (PD) Programs can be safely and successfully implemented. (RVN, 1970: p. I-1)

MACV's definition of security contrasted sharply with the one described in the pacification plan. For MACV, security meant inviolable borders and the elimination of base areas and main force units in South Vietnam. For the population, security meant a safe hamlet in which to live, work, and raise families; and it was this type of security that meant the most

in Vietnam. The way to effect this was through a police oriented, permanent presence at the hamlet level to eliminate the VCI and build popular trust in the government. MACV's operational planning did not focus on this aspect of the war, which contributed to its defeat because the Vietnam War was a popular war in which the population's security was more important than that of the military forces engaged therein.

Combat after - action reports reflect MACV's focus on the large unit war and the reliance on firepower that United States forces exhibited. The intelligence portions of the reports focus on communist main forces and infiltration routes. Relatively small units, such as battalions and squadrons, had major amounts of artillery and air power at their disposal: firepower they did not hesitate to use. Employment of massive firepower was by no means discriminate. The after - action reports show how MACV's guidance was operationalized by United States forces and indicate a misunderstanding of the war's nature. Rather than dispersing and conducting counterinsurgency operations by living with the population, American units concentrated in large bases and sallied out on large unit missions to wreak havoc on enemy forces - which they did with regularity and precision. Unfortunately, the popular aspect of the Vietnam required the former type of force, not the latter.

General Abrams' LRPTG was very perceptive in identifying MACV's shortcomings and the political constraints facing that headquarters in 1969. It concludes, "Finally, the bulk of the US effort, (including planning) understandably, but persistently remains focused on the shooting war, with the result that fundamental socio-economic-political problems underlying the insurgency continue to be relatively neglected." (LRPTG, 1969:

p. 28) MACV attempted to rectify this via the "one war" strategy articulated in the 1970 and 1971 plans, but the main focus of the war continued to be on its conventional aspects rather than on the pacification effort. In fact the very conduct of the conventional war undermined the pacification effort by continuing to alienate the population.

MACV's operational planning had to adapt to the peculiar environment facing it in Vietnam: a hybrid of popular and conventional war with the former posing the main threat. Larry Cable describes the Democratic Republic of Vietnam's effectiveness in limiting MACV's options:

The possibility that the North Vietnamese were in the process of trapping the US in an unsolvable dilemma was not considered by the American military high command. The nature of the dilemma was easy to see and is even implied in the JCS draft presidential memorandum. By inveigling the US into a continuation of the 'big war' of search and destroy operations against the PAVN and Viet Cong main force units, the North could assure continued social, political, and economic chaos within South Vietnam. This would impair efforts at pacification and nation building and a continuation of American losses without apparent useful result. Thus political will within South Vietnam and the United States would be undercut. The use of sanctuaries along the DMZ and Cambodian borders allowed PAVN and the Viet Cong main forces to tie down a significant percentage of American ground combat strength. By using the Viet Cong main forces as the primary offensive instrument, Hanoi could use Southern blood to further ablate American will. If the US diverted its ground resources to deal with pacification, the PAVN force in being could threaten a spectacularly successful operation against a population center such as Quang Tri City, Hue, or Pleiku, again undercutting American and South Vietnamese political will. Hanoi could rely on the ongoing air war against the North to maintain and consolidate the popular support of its citizens for the war, particularly for the expansive goal of unification under Northern control. (Cable, 1991: p. 162)

MACV never resolved the dilemma facing it despite the different combinations of programs contained in the combined campaign plans. At the risk of presenting a counterfactual solution to the dilemma, operational planning that gave consistent priority

to the pacification effort, maintained a healthy strategic reserve, and prepared contingency plans to deal with main force offensives in the central highlands may have served United States' and South Vietnamese interests better than the large unit focus of the plans MACV ended up with.

The qualitative nature of chaos theory and Clausewitz's theory of war does not mean, however, that nothing in the system or in warfare is quantifiable. The example of the impact of superior numbers in an engagement or of the constant influence of gravity on a spacecraft demonstrate this. These components of a system are quantifiable and do affect the system, yet the system maintains its chaotic nature. Like the presence of linearities within chaotic systems, quantifiable phenomena within a system that can only be assessed qualitatively is a unique aspect of chaos theory.

X. CONCLUSION

Kellert's definition of chaos theory, then, offers a framework with which one can analyze human phenomena such as war. It offers an epistemological break with the predictive and linear concepts of the past and forces the student of war to rethink some of the interpretations of Clausewitz and other military theorists. James Gleick summarizes the scope of chaos theory:

In science as in life, it is well known that a chain of events can have a point of crisis that could magnify small changes. But chaos meant that such points were everywhere. They were pervasive. In systems like the weather, sensitive dependence on initial conditions was an inescapable consequence of the way small scales intertwined with large. (Gleick, 1987: p. 23)

Using chaos theory, therefore, becomes a valuable way to view human activities such as war due to its qualitative approach to systems that are simultaneously unstable and deterministic.

Chaos theory also provides a vehicle with which one can gain a clearer understanding of the nature of war and of Clausewitz's attempts to formulate a theory that accurately describes its essential parts. Michael Mazarr notes in his monograph entitled, "The Revolution in Military Affairs: A Framework for Defense Planning":

The essentially chaotic nature of world politics is mirrored in warfare. Combat itself is a chaotic enterprise, dominated by such elements as feedback, sensitive dependence on initial conditions, and chance. At least one observer [Beyerchen] contends that this conclusion represents Clausewitz's central message. (Mazarr, 1994: p. 7)

The unique combination of a dynamical and deterministic system which exhibits sensitive dependence on initial conditions, nonlinearity, and aperiodicity makes On War unusual in

itself. That Clausewitz's theory so closely mirrored the philosophical tenets of chaos theory some 150 years prior to its formulation is uncanny and underscores the continuing relevance of his work.

War's dual nature, highlighted by viewing it through the lens of chaos theory, makes the conceptualization of it important to an external intervener such as the United States in the Vietnam War. MACV's inability to recognize what it was facing, a popular war with conventional overtones, led it to prepare operational plans that failed to address the most serious problems facing the Republic of Vietnam. The unpredictability of war and the nonlinear nature of the feedback from the means it employed negated whatever linear advantages the United States possessed.

Drawing general conclusions from history is a difficult task and is fraught with dangers for those who use history as a vehicle for teaching "lessons learned." As historian Donald Abenheim counsels, "Beware the pitfalls of anachronism and determinism that derive from buccaneering with the evidence." (Abenheim, 1995: p. 1) At the risk of overgeneralizing from MACV's experience in Vietnam, it is safe to say that identification of what type of war one is facing is a good start. Gordon McCormick developed a set of five general rules for a state to follow before getting involved in a conflict that do this very thing. They are sequential and must be repeated often due to the dynamical nature of war:

- 1) Question your assumptions.
- 2) Determine the nature of the problem: conventional or popular war?
- 3) Determine the appropriate solution set: conventional or counterinsurgency response?
- 4) Evaluate the host state's strengths and weaknesses.
- 5) Evaluate the costs and benefits of intervening.

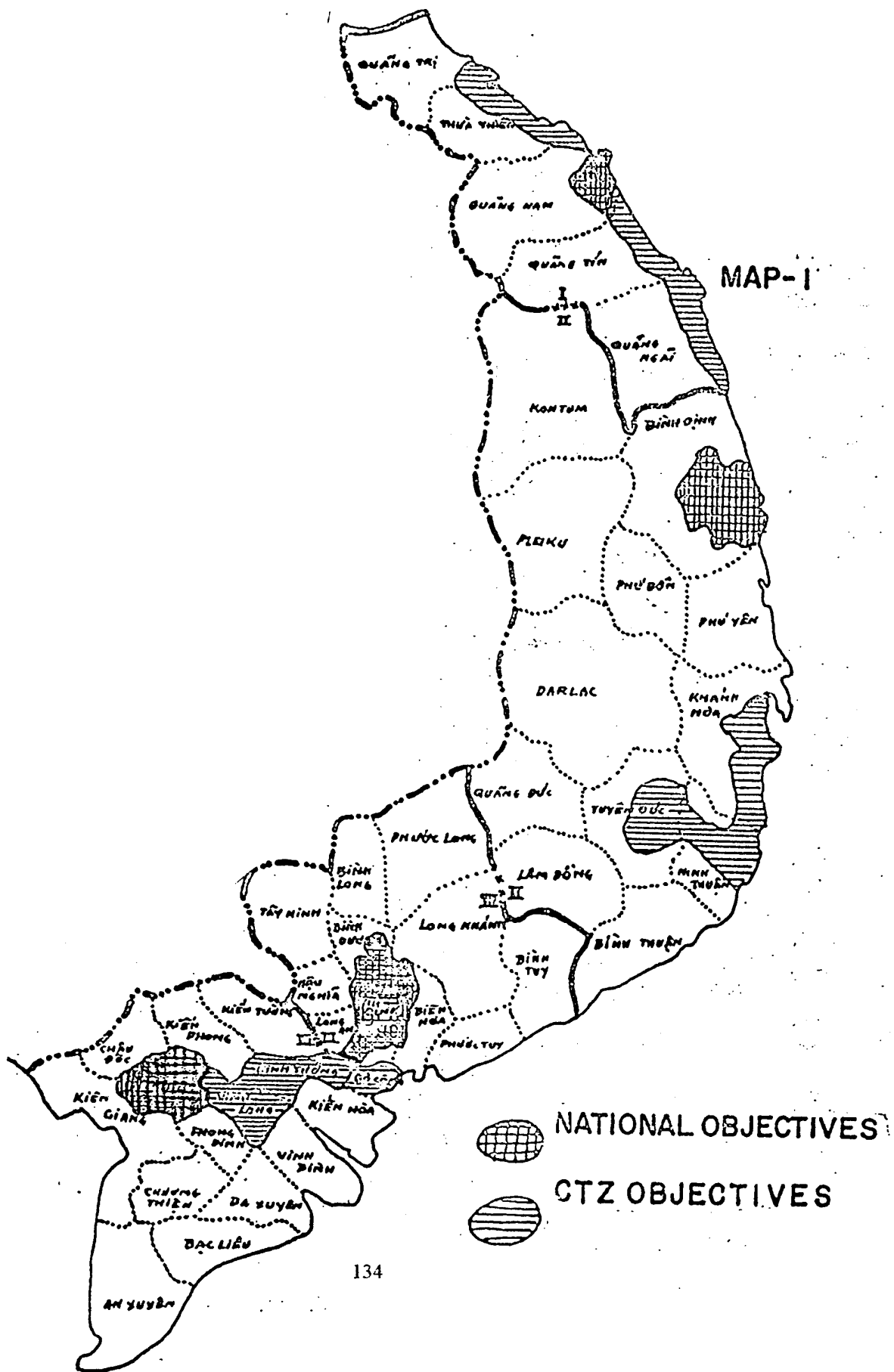
(McCormick, 1995) Using a chaos theory

approach to war forces one to do the first of these because of the nonlinearity and instability of chaotic systems such as war; one can never assume that the system is progressing as the original prediction projected. It also provides the answer to the second question - to what degree is the war popular or conventional? Viewing war through chaos theory's lens provides the answer to this question by differentiating the ways that war's essential components interact in the two types of conflict. Once the nature of the problem is apparent, then the relatively straightforward processes of choosing appropriate and feasible solutions and conducting a costs - benefits analysis can occur.

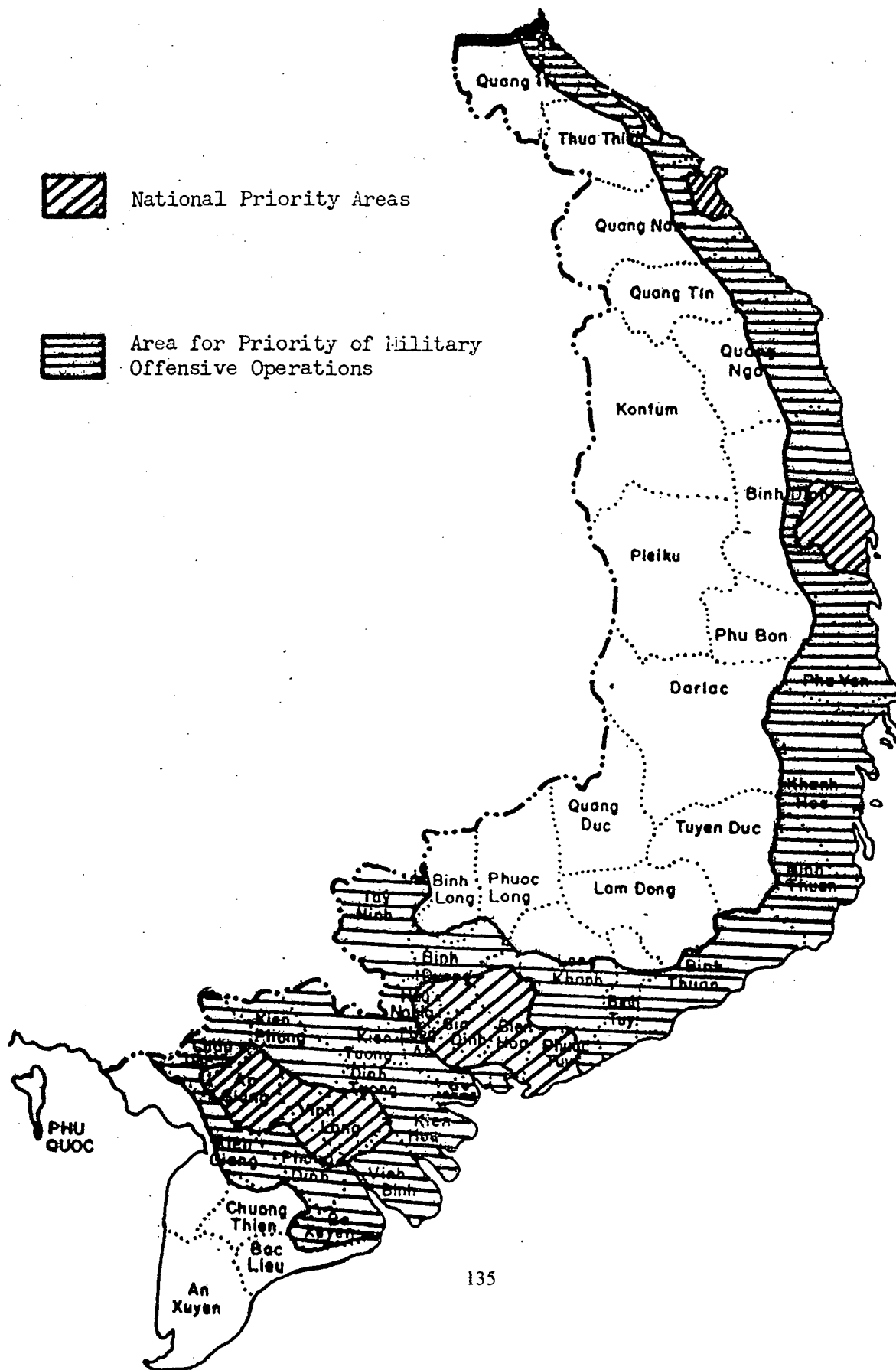
APPENDIX A. COMBINED CAMPAIGN PLAN MAPS, 1966 - 1971

The maps that follow, on pages 134 through 140 are copies of the maps included in MACV's Combined Campaign Plans from 1966 - 1971. They show the areas in which MACV intended to focus its attention for that year. Although the format differs slightly from year to year, one can see the general pattern of MACV's attention using the graphics and key provided for each map.

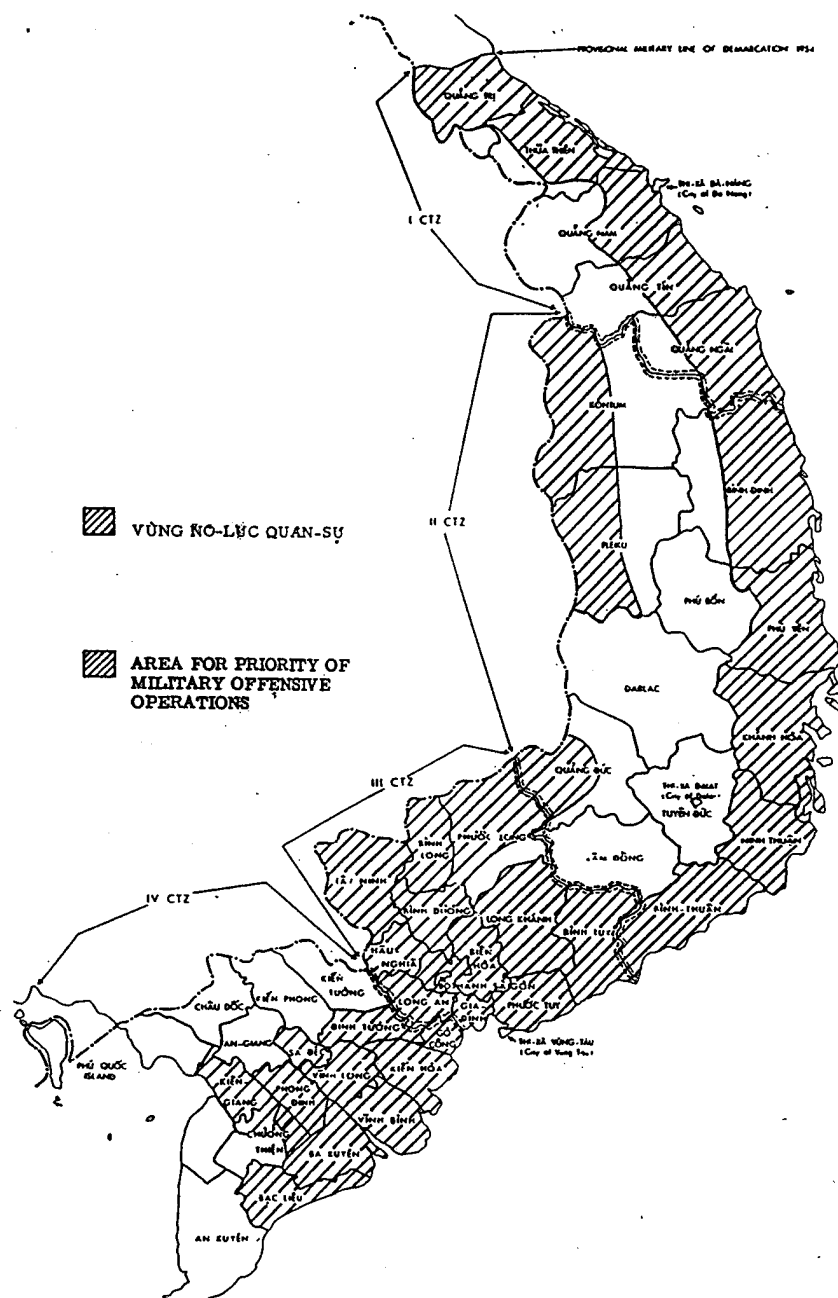
COMBINED CAMPAIGN PLAN MAP, 1966



COMBINED CAMPAIGN PLAN MAP, 1967



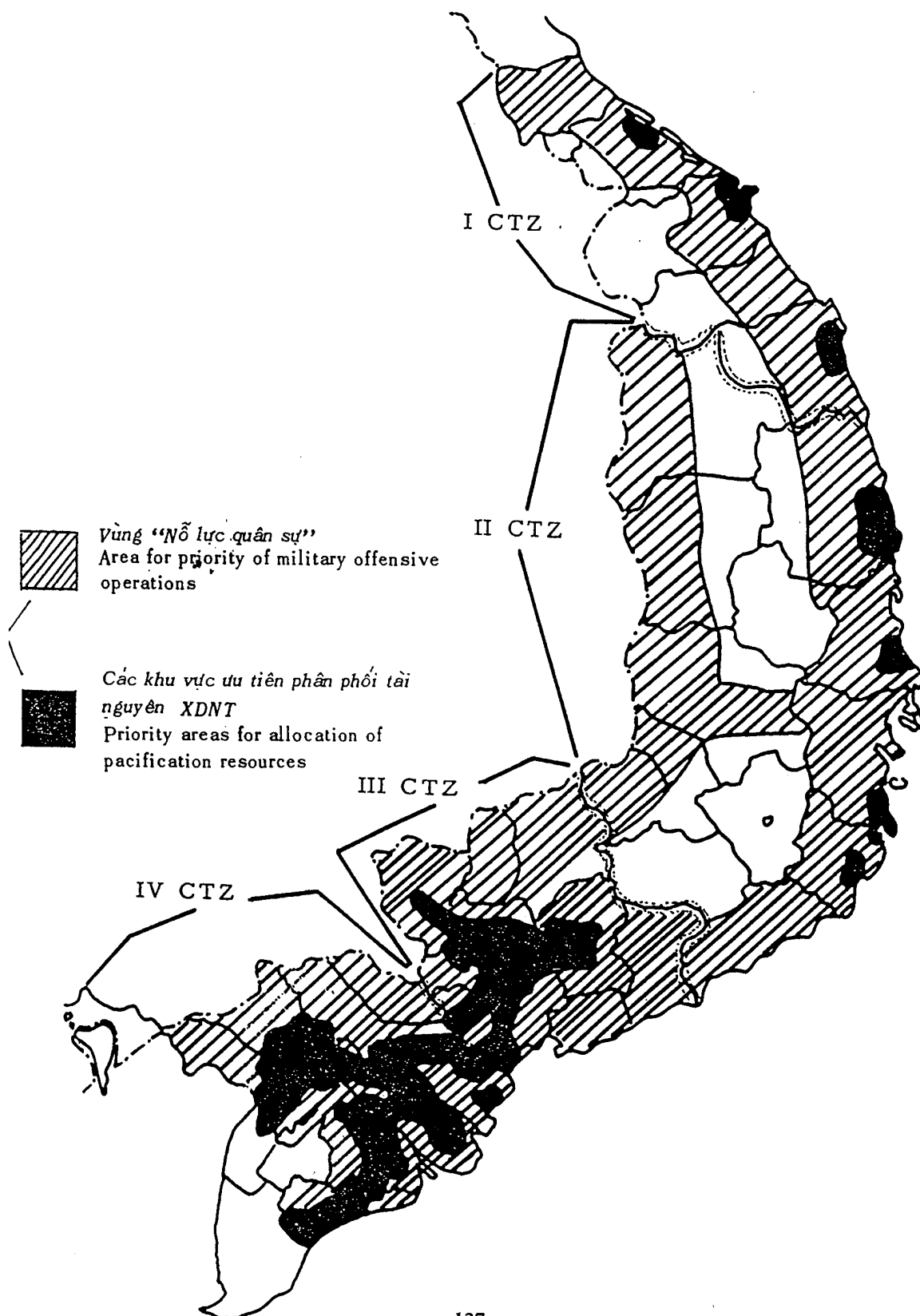
COMBINED CAMPAIGN PLAN MAP, 1968



Phụ trang 1 (Vùng Nổ-lực quân-sự) của Kế-hoạch hỗn-hợp Quân-sự 1968, AB 143.

Inclosure 1 (Area for Priority of Military Offensive Operations) to Combined Campaign Plan 1968, AB 143

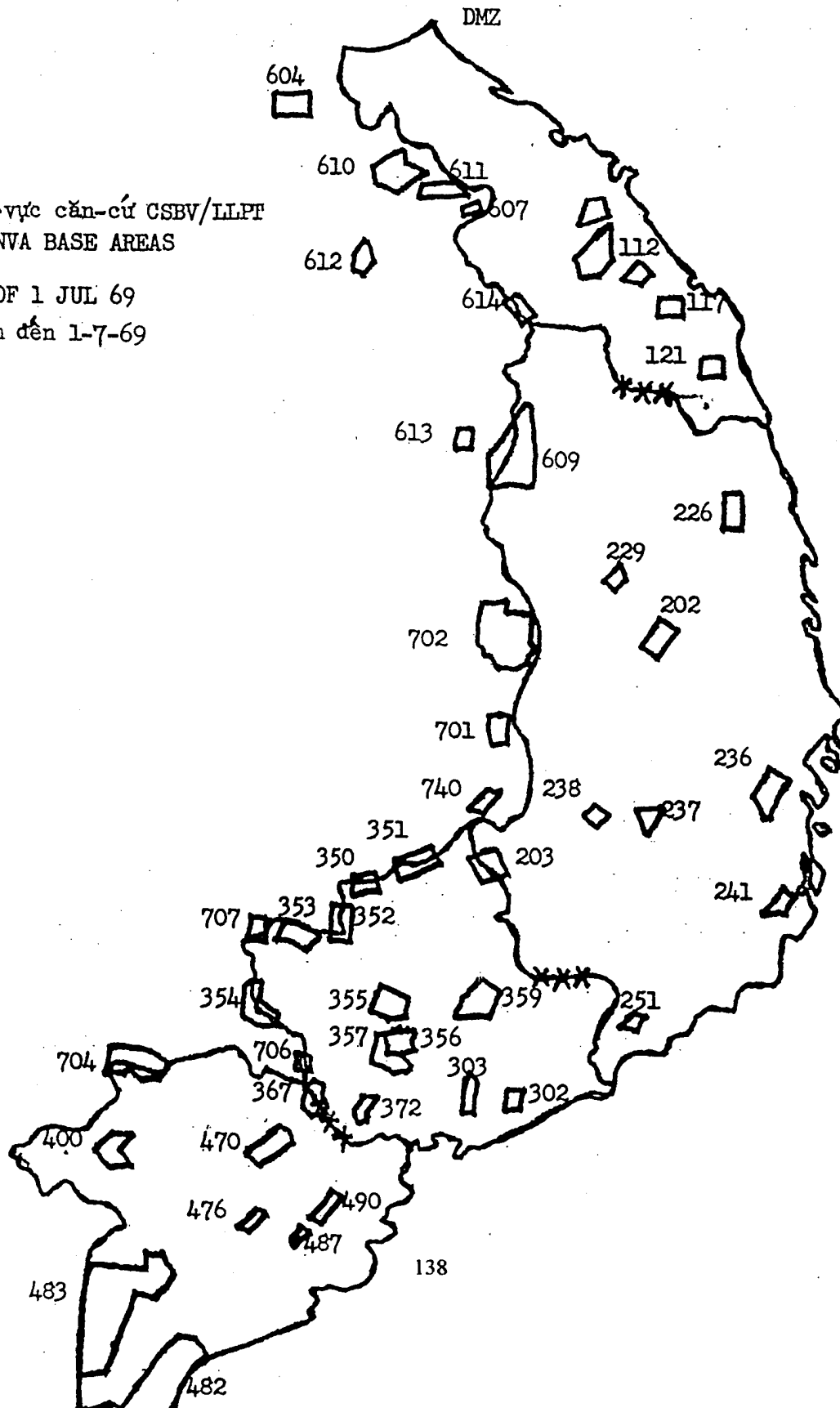
COMBINED CAMPAIGN PLAN MAP, 1969



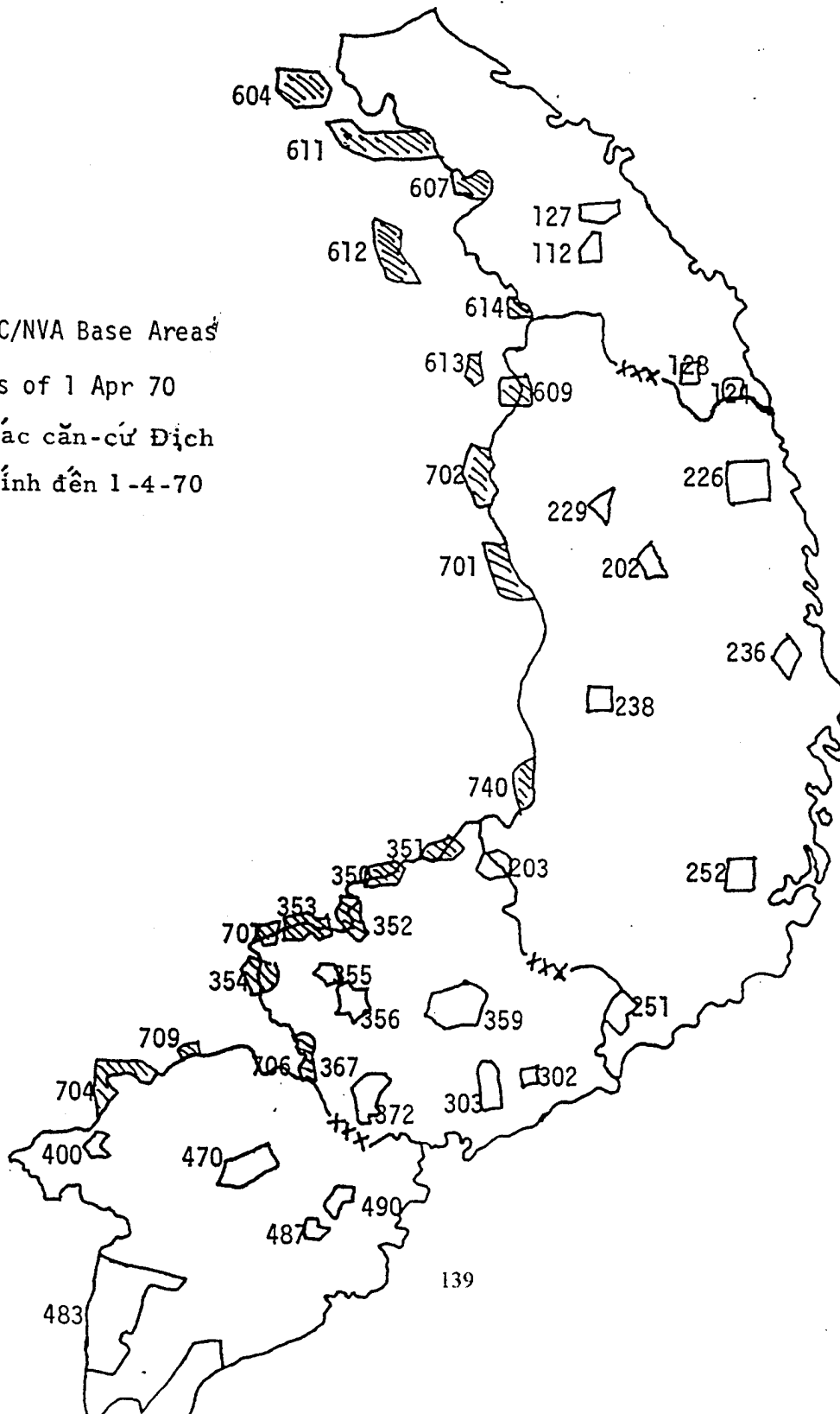
COMBINED CAMPAIGN PLAN MAP, 1970

Khu-vực căn-cứ CSBV/LLPT
VC/NVA BASE AREAS

AS OF 1 JUL 69
tính đến 1-7-69



































VC/NVA Base Areas
As of 1 Apr 70
Các căn-cứ Địch
Tính đến 1-4-70






APPENDIX B. PERCEPTIONS OF THREAT, 1970 - 1971

The following table and key, taken from MACV's 1970 Combined Campaign Plan, shows the perceived threats facing the Vietnamese peasant living in South Vietnam. An identical table appeared in the Republic of Vietnam's Pacification and Development Plan and MACV's 1971 Combined Campaign Plan.

TYPES

TYPES					
	CROP DESTRUCTION				
	TAXATION				
	IMPRESSMENT, KIDNAPPING				
	ASSASSINATION				
	TERRORIST ATTACKS				
	GROUND OPERATIONS				
	MORTAR / ARTILLERY				
	MINES, BOOBY TRAPS				
PERCEIVED BY		VILLAGER			
		LOCAL SECURITY FORCE			
		LOCAL GVN OFFICIALS			
		GVN LEADERS			
		US MILITARY IN SVN			

KEY

-  "ENEMY" (VC / NVA)
-  "FRIENDLY" (US / FWMAF / RVNAF)
-  BOTH "ENEMY", "FRIENDLY"

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